

# Reexamining the Calculus of Voting: A Social Cognitive Perspective on the Turnout Decision

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## **Abstract**

This study applies social cognitive theory to the study of voter turnout, examining the effects of self-efficacy on citizens' decisions of whether or not to vote. Consistent with recent arguments in cognitive psychology (Fenton-O'Creevy, Nicholson, Soane, & Willman, 2003, 2005), I argue that excessive perceptions of self-efficacy lead some citizens to overestimate their vote's impact in close elections and to vote as a consequence of these perceptions. This illusion of control is further engendered by the features of skill-based activities such as choice, personal involvement, stimulus familiarity, and exertion of effort (Langer, 1975) that are inherent in the act of voting. Employing both cross-sectional and panel data, I find that individuals with high levels of self-efficacy are more likely to be moved to vote by perceptions that an election will be close than are citizens with low levels of self-efficacy. The results demonstrate the utility of social cognitive theory for the study of voter participation.

## 1 Introduction

Individual-level studies of voter turnout typically find that citizens' perceptions of an election's closeness have little effect on their decisions of whether or not to vote (Aldrich, 1976; Ferejohn & Fiorina, 1975; Sanders, 1980). The finding that perceived closeness is only weakly and inconsistently related to turnout at the micro level has led scholars to conclude that citizens are not motivated to vote by the subjective probability of casting a decisive ballot – the  $P$  term in Riker and Ordeshook's (1968) calculus of voting. Sanders (1980, 861), for example, interprets her findings of the miniscule effects of perceived closeness on turnout as “confirmation of the weak role played by probability estimates in the voting calculus.”

But does the null relationship between perceived closeness and turnout truly indicate that some citizens are not motivated to vote by the prospect of casting a decisive vote? In this paper, I employ social cognitive theory to demonstrate that the conventional conclusion within political science is erroneous. The conventional conclusion, I argue, is an artifact of the weak psychological foundation, and the consequent empirical misoperationalization, of the subjective probability of casting a decisive ballot. Nearly all individual-level tests of the calculus of voting have employed the survey respondent's subjective perception of an election's closeness as a proxy for her subjective probability of casting a decisive ballot. From a psychological perspective, however, perceptions of closeness and perceptions of a vote's decisiveness are conceptually distinct from each other. These two perceptions should also remain empirically distinct as a consequence.

Many citizens will perceive validly that an election will be close and perceive just as validly that their vote will not be decisive even in such a close contest.<sup>1</sup> Such citizens will not be motivated to vote by the prospect of being the pivotal voter. Only if citizens perceive that an election will be close *and* overestimate the impact of their own vote will they be

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<sup>1</sup>Gelman, King, & Boscardin (1998) estimate that the probability of casting a decisive vote in a close presidential election is roughly 1 in 10 million.

motivated to vote by the subjective probability of casting a decisive ballot. The perception of the election's closeness does not differ across the two sets of citizens; only the response to this shared perception differs. Modeling the heterogeneous responses to perceived closeness as though they were homogeneous, as we implicitly do with the standard closeness proxy, has the natural effect of biasing estimates of the effect of  $P$  downward and producing null results.

To estimate the calculus of voting accurately, we need a more valid measure of  $P$  that incorporates heterogeneity in citizens' subjective probabilities of casting a decisive ballot. In this paper, I construct such a measure and demonstrate its relationship to turnout. The measure is grounded in cognitive psychological theory and its concepts of self-efficacy and illusion of control. I argue that high levels of self-efficacy among some citizens induce an illusion of control in which they perceive an inflated probability of their prospect of casting a decisive ballot in close elections (see Fenton-O'Creevy, Nicholson, Soane, & Willman, 2003, 2005). This illusion of control is further engendered by the features of skill-based activities – choice, personal involvement, stimulus familiarity, and exertion of effort – that are integral to the act of voting (Langer, 1975).

Employing validated NES turnout data, I find that a revised subjective probability measure incorporating respondents' self-efficacy predicts turnout where the standard proxy of perceived closeness does not. The results present three central implications for our understanding of voter participation. In revising our conception of the motivations for voting, the results identify the importance of cognitive processes for the turnout decision and argue that a cognitive psychological perspective can provide significant gains in understanding voter participation. In identifying the importance of subjective perceptions of decisiveness for some citizens' turnout decisions, the analysis also argues that strategic elites gain electorally by emphasizing the importance of every vote in close elections. These electoral gains, moreover, may be asymmetric, as Republican identifiers have exhibited significantly higher levels of self-efficacy than Democratic or Independent identifiers. Finally, the results present

a solution to the macro-micro paradox in studies of voter participation regarding the significant effects of closeness on macro-level turnout and the null effects of perceived closeness on micro-level turnout.

The paper is structured as follows. In the next sections, I examine Riker and Ordeshook's conception of subjective probabilities in the calculus of voting and cognitive psychology's concepts of self-efficacy and the illusion of control. Next, I reoperationalize the calculus of voting incorporating citizens' self-efficacy beliefs and estimate models with both the standard  $P$  term and the revised  $P$  term. In the following section I identify the significant turnout impact of the illusion of control – the predicted probability of voting increases by 23 percentage points for highly self-efficacious respondents simply as a consequence of perceiving an election as close. I also document the prospects for partisan and ideological biases in the illusion of control, and in aggregate partisan and ideological turnout as a consequence. I conclude by discussing the implications of the reexamined calculus of voting for our understanding of voter participation.

## 2 Subjective Probability and the Calculus of Voting

Riker and Ordeshook's calculus of voting model takes the form:

$$R = PB - C + D, \tag{1}$$

where  $R$  = the citizen's net reward from voting,  $P$  = the citizen's subjective probability of casting a decisive ballot,  $B$  = the citizen's candidate differential benefit (the difference in expected utility provided by the citizen's preferred candidate versus the citizen's less preferred candidate),  $C$  = the citizen's costs of voting, and  $D$  = the citizen's psychological benefit from voting (Riker and Ordeshook 1968, 28). If voting is rational, the citizen only

votes if  $R > 0$ .<sup>2</sup>

Riker and Ordeshook's formulation incorporates two modifications to Downs' (1957) earlier rational voting model. Their replacement of Downs' investment benefit from the continuation of democracy (which collapses under the weight of the collective action problem) with a psychological benefit (the  $D$  term) has attracted considerable attention and controversy (e.g., Barry, 1978; Green & Shapiro, 1994).<sup>3</sup> Less noted, however, where Downs (1957, p. 244-45) alternates between an economic, substantive rationality perspective on the probability of casting a decisive ballot and a bounded rationality conception incorporating the potential for cognitive errors, Riker and Ordeshook commit to the latter perspective.

In the substantive rationality formulation, citizens accurately perceive that their probability of casting a decisive ballot is infinitesimally small. As a consequence, any candidate differential benefit is discounted to near zero. This is not so, however, in Riker and Ordeshook's calculus of voting. Instead, Riker and Ordeshook (1968, p. 38-39) explicitly recognize that some citizens may overestimate the subjective probability of casting a decisive ballot:

“It is likely that, for many people, the subjective estimate of  $P$  is higher than is reasonable, given the objective circumstances. Subjected as we are to constant reminders that a few hundred carefully selected votes by non-voters could reverse the results of very close elections, such as the Presidential election of 1960, the subjectively estimated chance of a tie (i.e.,  $P$ ) may be as high as the propaganda

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<sup>2</sup>In this analysis, I am agnostic as to whether turnout is rational (whether citizens vote iff  $R > 0$ ). I hypothesize, however, that the probability of voting is increasing in benefits and decreasing in costs.

<sup>3</sup>Although typically referred to as a benefit from fulfilling one's civic duty, Riker and Ordeshook's conception of the psychological benefit from voting is actually broader, incorporating five possible psychological benefits: those resulting from complying with the ethic of voting, affirming allegiance to the political system, affirming a partisan preference, deciding on a candidate, and affirming one's efficacy in the political system (28).

urges it to be, even though in objective calculations the chance of a tie may be low.”

Although Riker and Ordeshook recognize that some citizens may overestimate the prospect of casting a decisive vote, they operationalize  $P$  as citizens’ perceptions of the election’s closeness. Their reasoning for this operationalization is that there is a positive relationship between closeness and the subjective probability of casting a decisive ballot, for as the expected closeness of the race increases, the subjective estimate of a tie also increases (Riker & Ordeshook, 1968, p. 33). However, to argue that there is a formal mathematical relationship between perceived closeness and the perceived decisiveness of a vote does not mean that this is a substantively meaningful relationship for most citizens. As Schwartz (1987, p. 118) notes, “saying that closeness increases the probability of being pivotal . . . is like saying that tall men are more likely than short men to bump their heads on the moon.” Closeness only counts if citizens overestimate the impact of their own vote.

### **3 Self-Efficacy and the Illusion of Control**

Which citizens are most likely to overestimate their vote’s impact? Social cognitive theory offers insights in its concept of self-efficacy beliefs. Bandura (1994, p. 71) defines self-efficacy as individuals’ “beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives.” Citizens’ perceptions of their operative capabilities are critical determinants of the activities they undertake, their effort and persistence in these activities, and their emotional responses to these activities (Bandura, 1986, p. 393-94). Citizens with efficacious beliefs are more likely to undertake arduous activities, expend effort and persist in the face of setbacks, and exhibit an internal locus of control than are citizens with inefficacious beliefs (Bandura, 1986, p. 393-94; Bandura & Cervone, 1986; Schunk, 1984). Even slightly optimistic self-percepts of efficacy, in this view, are beneficial and adaptive, a view expressed by Bandura (1997, p. 71):

“Optimistic self-appraisals of capability, *that are not unduly disparate from what*

*is possible*, can be advantageous, whereas veridical judgments can be self-limiting” (cited in Fenton-O’Creevy et al., 2003, p. 54; emphasis added).

Note, however, the qualifying language employed by Bandura. What if citizens’ perceptions of their self-efficacy exceed what is possible? Do citizens act on such perceptions to undertake and persist in futile or detrimental activities, or do cognitive regulatory processes such as reappraisal prevent pointless or disadvantageous behaviors?

Here, there is considerable evidence that reappraisal does not always function effectively to lead to the reconsideration of self-defeating courses of action in citizens with high levels of self-efficacy. Instead, high levels of self-efficacy can promote maladaptive consequences. Stone (1994) and Vancouver, Thompson, Tischner, and Putka (2002), for example, find that high levels of self-efficacy induce overconfidence in experimental subjects’ evaluations of their own abilities. Whyte, Saks, and Hook (1997) find that subjects with high levels of self-efficacy persist in losing courses of action.

Cognitive psychologists (Fenton-O’Creevy et al., 2003, 2005) have posited that high levels of self-efficacy also induce the illusion of control, in which individuals exhibit “an expectancy of a personal success probability [in activities] inappropriately higher than the objective probability would warrant” (Langer, 1975, 313). The illusion of control, in short, leads citizens to perceive that they have a greater influence over outcomes than they in fact do.<sup>4</sup> While the link between self-efficacy and the illusion of control has yet to be examined empirically, there is strong reason to believe that this relationship exists. Cognitive regulation does not intervene to prevent maladaptive consequences resulting from high levels of self-efficacy. And the negative consequences of high levels of self-efficacy that have been identified – overconfidence and commitment to losing courses of action – have been linked to the illusion of control (Goodie, 2005; Zuckerman, Knee, Kieffer, Rawsthorne, & Bruce, 1996).

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<sup>4</sup>The illusion of control is thus somewhat misnamed, as it does not imply that the individual perceives with certainty that she will control an external event, only that she perceives an inflated subjective probability of influencing the event.

The illusion of control is promoted when features of skill-based activities such as choice, personal involvement, stimulus familiarity, and active exertion of effort are present in the task (Langer, 1975, 313). Such features typically associated with skill-based activities increase the citizen's perception that she is exercising influence over the outcome of the task. The illusion of control has been found to affect a broad range of behaviors, including lottery participation (Langer, 1975), puzzle solving (Zuckerman et al., 1996), gambling (Letarte, Ladouceur, & Mayrand, 1986), and attempts at experimental light manipulation (Gollwitzer & Kinney, 1989). There is little reason to believe that voting is immune from this illusion of control; on the contrary, inflated subjective probabilities are likely to extend to voting, an activity that features each of the cues of skill-based activities but that does not allow the individual to exert influence over the collective outcome.<sup>5</sup>

Employing this cognitive psychological framework, I hypothesize that high levels of self-efficacy induce an illusion of control in some citizens in which they perceive an inflated probability of casting a decisive ballot in close elections. This inflated subjective probability, in turn, leads some citizens to vote in close elections who would not otherwise vote. In the aggregate, election outcomes may be affected if one party's supporters are more likely to inflate the subjective probability of casting a decisive ballot than are the other party's supporters.

### **3.1 Self-Efficacy: The Cognitive Psychological Conception vs. the Standard Conception in Political Science**

This cognitive psychological perspective on the relationship between efficacy and turnout provides a broader conceptualization of efficacy's effects on turnout than the standard conception of efficacy in political science. In the standard political science conception, internal political efficacy refers to citizens' beliefs that they are able to understand politics and participate effectively in politics (Craig, Niemi, & Silver, 1990, p. 290). Internal political efficacy

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<sup>5</sup>Stimulus familiarity in the act of voting refers to familiarity with the physical process of voting.

is thus self-efficacy restricted to the political domain (see, e.g., Madsen, 1987).

In the standard political science conception, efficacy has purely adaptive effects on participation. The highly efficacious, in this view, are more likely to vote because they understand politics and generally participate effectively in politics. This positive orientation toward the political system produces increased psychological motives for voting (thus increasing the  $D$  term). Perceptions of efficacy do not, however, affect perceptions of the probability of casting a decisive ballot. As a consequence, the standard conception of efficacy does not predict that the highly efficacious will be moved to vote by perceptions of an election's closeness.

The cognitive psychological conception, in contrast, does make this prediction. First, it is important to note what the two conceptions do not differ on: both conceptions predict a significant positive main effect of efficacy on turnout as the highly efficacious are motivated to vote by the psychological benefits of voting. For the standard conception, the effect of efficacy stops here. The cognitive psychological perspective, in contrast, predicts that the highly efficacious will be further motivated to vote by perceptions of an election's closeness (and by the resulting inflated subjective probability of casting a decisive ballot).

The cognitive psychological perspective, unlike the standard perspective, thus also predicts an additional positive interactive effect of perceptions of self-efficacy and closeness (the revised  $P$  term) and candidate benefits (the  $B$  term) on turnout. The standard conception in political science does not make this prediction. Testing for this interaction incorporating a revised  $P$  term thus provides a critical test between the two competing conceptions of efficacy. If the revised  $PB$  interaction has a significant positive effect on turnout where the standard  $PB$  term does not, we have evidence in favor of the cognitive psychological perspective.<sup>6</sup>

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<sup>6</sup>Although this test of the illusion of control's effect on turnout is indirect, it is theoretically grounded in cognitive psychology and is likely to be more effective than a direct test, such as asking survey respondents whether they think they will cast the decisive ballot. As scholars (Alba & Hutchinson 2000; Kuusela & Paul 2000; Nisbett & Wilson 1977) have

In summary, cognitive psychology predicts that excessive perceptions of self-efficacy induce an illusion of control in some citizens in which they perceive inflated subjective probabilities of the influence of their own actions. There is little reason to believe that voting is a behavior that is uniquely immune to this illusion of control; on the contrary, four features of skill-based activities – choice, personal involvement, stimulus familiarity, and active exertion of effort – that promote the illusion of control are intrinsic to the act of voting. As a consequence, by incorporating citizens’ perceptions of self-efficacy we can operationalize the  $P$  term in a manner that is consistent with Riker and Ordeshook’s bounded rationality conception of the term. In the next section, I discuss this operationalization of  $P$ , as well as my operationalization of the other terms in the calculus of voting.

#### 4 Reoperationalizing the Calculus of Voting

The reoperationalization of  $P$  suggested in the previous section requires a measure of respondents’ self-efficacy perceptions. The four most highly correlated items from the Robinson-Shaver (1969) efficacy battery have been commonly employed to measure self-efficacy (Greeley, 1975; Gurin, Gurin, & Morrison, 1978; Hughes & Demo, 1989, p. 140; Jang & Johnson, 2003; Thompson & Keith, 2001; Wright, 1976, p. 107). The four questions are as follows: 1) “Do you think it’s better to plan your life a good way ahead, or would you say life is too much a matter of luck to plan ahead very far?” 2) “When you do make plans ahead, do you usually get to carry out things the way you expected, or do things usually come up to make you change your plans?” 3) “Have you usually felt pretty sure your life shown, many decision processes occur at a subconscious level, with citizens unaware of how they reach decisions or of cognitive biases that affect the decision-making process. As a consequence, asking survey respondents whether they think they will cast a decisive ballot both encourages a conscious, sober second thought that citizens do not actually entertain when deciding whether to vote and also asks respondents for a self-report that is likely to be uncorrelated with the actual subconscious decision-making process.

would work out the way you want it to, or have there been times when you haven't been sure about it?" 4) "Some people feel they can run their own lives pretty much the way they want to; others feel the problems of life are sometimes too big for them. Which one are you most like?"

The only election for which we have these self-efficacy items and a validated measure of turnout is the 1976 presidential election.<sup>7</sup> As a consequence, the analysis in this paper focuses on the effects of subjective probabilities on turnout in the 1976 election. The data employed are from the 1976 National Election Study.<sup>8</sup>

A principal components analysis of the four self-efficacy items in the 1976 NES finds that a single factor accounts for 49 percent of the variance in the items.<sup>9</sup> Each of the three remaining factors accounts for less than 20 percent of the variance. Employing Kaiser's criterion, the factor analysis shows that the responses to the four self-efficacy items load on a single factor.<sup>10</sup> The four items were thus combined into a *Self-Efficacy* scale (full

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<sup>7</sup>It is critical to use a validated turnout measure to examine self-efficacy's effects on turnout. Self-efficacy exhibits a cross-sectional relationship only with validated turnout, not with respondents' self-reports of their own turnout. I therefore rely primarily on the validated turnout measure in this paper.

<sup>8</sup>Although the self-efficacy items are included in the 1972 National Election Study and the NES also attempted to validate the turnout of respondents in the 1972 survey, the validated turnout data for 1972 are highly problematic. Typically, the NES validated respondents' reported turnout within several months of the election (Traugott, 1989, p. 11). However, the NES did not attempt to validate the reported turnout of respondents in the 1972 survey until 1977. Because respondents' voting records could have been lost or purged during the intervening five years, the NES argues against using the validated turnout measure for 1972 respondents (see Traugott, 1989).

<sup>9</sup>Analyses in this paper were conducted using Stata 9.2.

<sup>10</sup>The loadings of the four self-efficacy items on this factor are, respectively, .66, .71, .69,

descriptions and descriptive statistics for all variables are included in the Appendix).

*Perceived Closeness* was measured using the respondent's perception of the national closeness of the presidential election. The respondent's *Candidate Benefit* was measured as the absolute value of the difference in her feeling thermometer scores for Gerald R. Ford and Jimmy Carter. The standard operationalization of the calculus of voting's *PB* interaction is thus *Perceived Closeness\*Candidate Benefit*. The revised operationalization of the *PB* interaction incorporating the respondent's self-efficacy is *Self-Efficacy\*Perceived Closeness\*Candidate Benefit*.

The *C* (costs) and *D* (psychological benefits) terms in the calculus of voting were modeled as a function of several covariates. Citizens with higher levels of education are posited to vote at higher rates than those with less education because of a stronger interest in politics (and thus stronger psychological benefits) and a greater capacity to overcome the bureaucratic costs associated with voting (Wolfinger & Rosenstone 1980, p. 79). *Education* was measured with a seven-category variable.<sup>11</sup> Income is also expected to be positively related to turnout because it eases the financial hurdles to voting. I measured *Income* using the respondent's family income quintile. Turnout is also expected to increase as individuals age and gain greater psychological benefits from voting and more experience in handling the bureaucratic

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and .68.

<sup>11</sup>I treat the control variables in the models as interval variables, rather than ordinal variables. An alternative specification modeling four of these variables, *Education*, *Income*, *Political Interest*, and *Religious Attendance* as ordinal measures shows that the simpler, interval treatment has no substantive effect on the models' estimates. In the alternative specification, I modeled the four variables with a set of categorical dummy variables. The statistical significance of the other variables in the models did not differ and the coefficient estimates were only marginally different across the alternative specifications. The coefficient estimate on the critical interaction term of *Self-Efficacy\*Perceived Closeness\*Candidate Benefit* did not change at all.

hurdles of voting before declining in later years as voter participation becomes more difficult (Wolfinger & Rosenstone 1980, p. 60). To examine these effects, I included *Age* and *Age Squared* covariates, with age measured in years.

Covariates measuring the effects of elite mobilization were also included in the model on two grounds. First, mobilization by political elites is a critical determinant of the costs and benefits of voting (Aldrich, 1995). Mobilization increases citizen interest in the campaign while decreasing the information and transaction costs of voting (Rosenstone & Hansen, 1993).

The inclusion of covariates measuring the effects of mobilization is also essential for resolving the macro-micro paradox that has marked studies of voter participation. Where perceptions of closeness at the micro level have little impact on individuals' turnout, actual closeness at the macro level exhibits a consistent positive relationship with aggregate turnout rates (Barzel & Silberberg, 1973; Caldeira & Patterson, 1982; Cox & Munger, 1989; Silberman & Durden, 1975). Aldrich (1993) argues that the solution to this paradox rests in elite mobilization efforts. On this view, elites increase their mobilization efforts in close elections; citizens are more likely to vote in such contests as a consequence of this heightened mobilization, not because they overstate the impact of their own vote. The null effects at the micro level exist, in this view, because citizens are unconcerned about closeness *per se* when deciding whether to vote.

In contrast, the cognitive psychological perspective I employ argues that both elite mobilization and the subjective probability of casting a decisive ballot have independent effects on turnout. On this view, the null effects of perceived closeness at the micro level exist because of the misoperationalization of the subjective probability of casting a decisive ballot. To determine which of these solutions to the macro-micro paradox is correct, we must include both a revised *P* term and mobilization measures in the model.

I included two measures to capture the effects of elite mobilization. The first, *Party Contact*, measures the effect of direct party contacting efforts on turnout. The covariate

is the respondent's report of whether one of the political parties contacted her during the campaign. Citizen interest may also increase in close contests due to non-personal forms of mobilization, such as campaign advertising. To examine these possible mobilization effects, I included a covariate, *Political Interest*, measuring the respondent's campaign interest. By controlling for both personal contacts and increased political interest we can examine the effects of subjective perceptions of decisiveness on turnout separate from elite mobilization effects.

The costs and benefits of voting are also likely to be affected by citizens' social connections to other citizens. Socially connected citizens should have stronger psychological motives for voting and lower information and transaction costs of voting than less socially connected citizens. To measure this effect, I included a *Religious Attendance* covariate, measured with a four-category measure of how frequently the respondent attends religious services.<sup>12</sup> I also examined the effect of voting laws on the turnout decision. Wolfinger and Rosenstone (1980) found that the most important registration law for turnout was the closing date, the date on which registration for the election closed. As a consequence, I included the covariate *Closing Date*, measuring the number of days before the election that registration closed in the respondent's state in 1976. The dependent variable in the model is the 1976 National Election Study's *Validated Turnout* measure.

#### 4.1 The Distribution of Self-Efficacy and Perceptions of Closeness

Figure 1 presents the distribution of self-efficacy and perceptions of the 1976 presidential election's closeness among respondents in the 1976 National Election Study. More than 17 percent of respondents chose the self-efficacious response on each of the four items in the self-efficacy battery and perceived the election as close. Another 22 percent of respondents

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<sup>12</sup>In an earlier specification, I also included a covariate measuring the respondent's length of household residence as a measure of social connectedness. This covariate, however, was highly correlated with respondent age and thus I excluded it from the models.

chose three of the four efficacious responses and perceived the election as close.

It is incorrect, of course, to infer from this that roughly 40 percent of potential voters in 1976 were moved to vote by inflated subjective probabilities of casting a decisive ballot. Many of these individuals possessed sufficient motivation to vote regardless of perceptions of the election's closeness; for others among these potential voters, perceptions of closeness could not overcome other hurdles to participation. Assuming that the 1976 election is representative of other close elections, however, cognitive psychology argues that inflated subjective probabilities of casting a decisive ballot are not rare among eligible voters. This is consistent with evidence from cognitive psychology that many citizens are susceptible to the illusion of control (Langer, 1975; Taylor & Brown, 1988).

## 5 The $P$ Terms and the Calculus of Voting

Table 1 presents probit estimates for models with the standard  $P$  term of closeness and the revised  $P$  term incorporating self-efficacy perceptions. The estimates from the standard model, reported in column 1, are consistent with existing studies. The standard  $PB$  interaction (*Perceived Closeness*\**Candidate Benefit*) has no effect on turnout. From these estimates we would conclude, as previous studies have, that citizens are not motivated to vote by the subjective probability of casting a decisive ballot.

The estimates from the revised model incorporating respondents' self-efficacy perceptions are reported in column 2.<sup>13</sup> These estimates directly contradict the conventional conclusion regarding subjective probabilities' effects on citizens' turnout decisions. Here, there is evi-

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<sup>13</sup>As Braumoeller (2004) and Brambor, Clark, and Golder (2006) demonstrate, in order to determine the effects of a higher-order interaction such as that between *Perceived Closeness*, *Self-Efficacy*, and *Candidate Benefit*, we must include all of the lower-order interactions between these terms in the model as well. As a consequence, the lower-order interactions between *Perceived Closeness* and *Candidate Benefit*, *Candidate Benefit* and *Self-Efficacy*, and *Perceived Closeness* and *Self-Efficacy* are also included in the model.

dence that subjective perceptions of decisiveness did boost turnout in the 1976 presidential election. The interaction of perceptions of self-efficacy, perceived closeness, and candidate benefits increased turnout where the interaction of perceived closeness and candidate benefits alone did not. Citizens with high levels of self-efficacy were more likely to be moved to vote by perceptions of closeness and candidate benefits than were citizens with low levels of self-efficacy. This effect existed independent of elite mobilization effects. In short, those citizens most prone to an illusion of control behaved exactly as Riker and Ordeshook's conception of the calculus of voting predicts.

We can get a sense of the impact of the illusion of control on turnout through statistical simulation. The critical question here is how citizens with differing perceptions of self-efficacy responded to the perception that the 1976 presidential election would be close. That is, assuming that citizens perceived significant candidate benefits, how much more did perceptions of closeness boost the probability of voting among highly self-efficacious individuals than among less self-efficacious individuals?

To answer this question, I conducted a statistical simulation using Tomz, Wittenberg, and King's CLARIFY software (King, Tomz, & Wittenberg, 2000; Tomz, Wittenberg, & King, 2003). I estimated the probabilities of voting for respondents with high levels of self-efficacy (a value of 4 on the *Self-Efficacy* variable) who perceived the election as close (*Perceived Closeness* = 1) and for those who did not perceive it as close (*Perceived Closeness* = 0), holding the *Candidate Benefit* variable two standard deviations above the mean (at 81.18), *Mobilization* at 1 (i.e., the respondents were contacted by a party), and all other covariates at their means. I conducted identical analyses for respondents with low levels of self-efficacy (a value of 0 on the *Self-Efficacy* variable). One thousand simulations were employed.

Figure 2 plots how perceptions of the election's closeness affected the predicted probability of voting among respondents with low and high levels of self-efficacy. The figure shows the change in the predicted probability of voting resulting solely from switching perceptions of the election from not close to close (i.e., shifting the value on *Perceived Closeness* from 0 to

1). As can be seen, perceiving the election as close had a much larger effect on the predicted probability of voting for the highly efficacious. The predicted probability of voting for highly self-efficacious respondents increased by 23 percentage points (from a probability of .67 to a probability of .90) simply as a result of perceiving the election as close. In contrast, perceiving the election as close increased the probability of voting among respondents with low levels of self-efficacy by only 7 percentage points (from .59 to .66). There were, in short, heterogeneous responses to perceived closeness depending upon respondents' self-efficacy.

To compare the relative effects of perceptions of closeness and party contacts on turnout, I employed a second statistical simulation. Specifically, I examined the effects of party contacts (varying the *Party Contact* variable from 0 to 1) on the probability of voting for both high and low self-efficacy respondents (as defined previously) who perceived the election as being close. All other covariates were kept at their values from the earlier simulation.

For citizens prone to an illusion of control, it was perceptions of closeness rather than partisan contacts that had the greatest impact on the probability of voting. Among highly self-efficacious respondents, being contacted by a political party increased the probability of voting by only 10 points (from .80 to .90), in contrast to the 23 point increase from perceiving the election as close. The reverse, however, was true among the non-efficacious. Partisan contacting increased the probability of voting among citizens with low self-efficacy by 17 points while perceptions that the election would be close increased the probability of voting by only seven points. Partisan mobilization, in short, had its strongest effect on the turnout of citizens with low levels of self-efficacy. Among the self-efficacious, however, it was perceived closeness, not party contacts, that did the most to boost turnout.

The other covariates in the revised calculus of voting model largely performed as expected. Higher levels of education and income were associated with an increased probability of voting. Age was positively related to turnout while age squared was negatively related to turnout. Political interest was positively related to turnout in the standard model, but had no effect on turnout in the model incorporating respondents' self-efficacy. Citizens who regularly

attended religious services had a higher probability of voting than less frequent attendees. Somewhat surprisingly, however, the closing date had no effect on turnout with other sources of voting costs and benefits included in the model.

### **5.1 The Effects of Changing Perceptions of Closeness on Reported Turnout Over Time**

Presser and Traugott (1992) argue that citizens consistently misreport or accurately report their turnout over time. As a consequence, although self-reported turnout should not be used for cross-sectional analyses, an implication of Presser and Traugott's analysis is that self-reported turnout may have some utility in examining over-time changes in voting in a panel data analysis. As a consequence, I also employed the self-reported turnout of 1972-1976 NES panel respondents as a robustness test of the effects of changing perceptions of closeness on turnout over time. The results support the results from the validated turnout analysis.

More than half (52.9 percent) of the 34 self-efficacious respondents (those with scores of 3 or 4 on *Self-Efficacy* in both 1972 and 1976) who did not perceive the 1972 election as likely to be close and reported not voting in that election, but who did perceive the 1976 election as close reported voting in the 1976 election. In contrast, none of the eight non-efficacious respondents (those with values of 0 on *Self-Efficacy* in both 1972 and 1976) who did not perceive the 1972 election as close and reported sitting out that election, but who did perceive the 1976 election as close were moved to vote in 1976. Again, we have evidence of heterogeneous responses to the perceived closeness of the 1976 election that depended upon respondents' self-efficacy.

## **6 The Partisan and Ideological Distribution of Self-Efficacy in the Electorate**

In contrast to the conventional conclusion regarding the calculus of voting, the results indicate that citizens prone to an illusion of control are moved to vote by the prospect of casting a decisive ballot. Although the analysis presented here focuses on the 1976 elec-

tion, this psychological response is unlikely to be time-bound. Instead, as a manifestation of more fundamental cognitive processes, voting in response to perceived decisiveness is a phenomenon that is likely to occur in many elections.

What are the aggregate political implications of voting that is spurred by subjective perceptions of decisiveness? Here, in contrast to the documentation of this behavior, our conclusions by necessity are a bit more speculative. While the tendency to overestimate the impact of one's vote is likely to persist across elections, the political correlates of this tendency may change over time in response to political issues, events, and actors. Thus, we can document the political impact of overestimated subjective probabilities in the 1976 election, recognizing that additional research is merited to document whether these same political consequences persist in current elections.

From a political perspective, the most consequential potential impact of perceptions of decisiveness is a partisan effect. If one party's identifiers exhibit significantly higher levels of self-efficacy, this produces an inherent advantage for the party in close elections. Moreover, it means that rhetorical appeals to the importance of voting in such elections – the familiar “every vote counts” – asymmetrically benefit one of the political parties.

Here the evidence in 1976 is clear. Republican identifiers exhibited significantly higher levels of self-efficacy than either Democratic or Independent identifiers (means of 2.59, 2.27, and 2.10, respectively, with the Republican vs. Democratic and Republican vs. Independent differences significant in a one-way ANOVA at  $p < .01$ , Bonferroni test). Thus, statements by Gerald Ford, Bob Dole, and surrogates during the campaign extolling the importance of voting served to narrow the eventual margin of victory in a contest that was in the end decided by less than 10,000 voters in Ohio and Hawaii.

In addition to the partisan bias in self-efficacy perceptions, there was also an ideological bias in these perceptions in 1976. Self-identified conservatives exhibited significantly higher levels of self-efficacy than either liberals or moderates (means of 2.69, 2.38, and 2.34, respectively, with the conservative vs. liberal and conservative vs. moderate differences significant

in a one-way ANOVA at  $p < .01$ , Bonferroni test). Given the correlation of ideology with partisan identification (a correlation in 1976 of .415,  $p < .001$ ), ideological and partisan biases in self-efficacy reinforced each other during the 1976 election. Whether subjective perceptions of casting a decisive vote continue to advantage Republican and conservative candidates is a question that merits additional investigation, particularly given the close margins of recent presidential elections.

## 7 Conclusion

In formulating their calculus of voting, Riker and Ordeshook posited that some citizens may vote because they overestimate the subjective probability of casting a decisive ballot. In the intervening decades, however, scholars have concluded that subjective probabilities have little impact on the turnout decision. This consensus, I have argued, rests on employing the weak proxy of perceived closeness for the subjective probability of casting a decisive vote. Self-efficacy beliefs produce heterogeneous responses to shared perceptions of an election's closeness. Modeling these heterogeneous responses demonstrates that those individuals most prone to an illusion of control are moved to vote by perceptions that an election will be close. The subjective probability of casting a decisive ballot spurs turnout among those citizens prone to overestimate the impact of their actions.

This consequence of high levels of efficacy may appear counterintuitive. Where cognitive psychologists have documented the maladaptive effects of efficacy, political scientists have generally been more optimistic about efficacy's effects on political behavior (e.g., Almond & Verba, 1963; Easton & Dennis, 1967; Rudolph, Gangl, & Stevens, 2000). But while the maladaptive effect of high levels of self-efficacy on the turnout decision may be surprising, the argument that cognitive errors affect political behaviors is not. Over the past decade and a half, political psychologists have examined how cognitive processes distort, and do not distort, a variety of political behaviors including opinion formation, candidate evaluation, and vote choice (see, e.g., Druckman, 2001; Kuklinski, Quirk, Jerit, & Rich, 2001; Lau &

Redlawsk, 2001; Lodge & Taber, 2000; Mutz, 1997; Zaller, 1992).

The effects of cognitive errors on the turnout decision are surprising in part because recent research in political psychology has been relatively less focused on voter participation than on other political behaviors (but see Gerber, Green, & Shachar 2003; McClurg 2003). As a consequence, we know considerably more about the cognitive processes that lead citizens to vote for one candidate over another than the cognitive processes that lead them to the voting booth in the first place. This paper has documented the significant impact that cognitive processes and cognitive errors exercise in the turnout decision – and the implications this presents for strategic political elites seeking electoral gain. The analysis argues that a cognitive psychological perspective can provide the same vital insights into the most fundamental of citizens’ political decisions – the decision of whether or not to vote – that it has for other political behaviors. In applying such a perspective, scholars can also better understand how elite-mass interactions shape macro-level turnout rates and election outcomes.

## Appendix: Variable Descriptions

### Independent Variables

*Perceived Closeness.* Question: Do you think it (the presidential race) will be a close race or will (respondent's predicted winning candidate) win by quite a bit? 0 = Will win by quite a bit, 1 = Close race, Mean: .84, Standard Deviation: .37, Minimum: 0, Maximum: 1.

*Candidate Benefit.* Absolute value of the difference in the respondent's feeling thermometer scores for Gerald R. Ford and Jimmy Carter. Mean: 31.06, Standard Deviation: 25.06, Minimum: 0, Maximum: 97.

*Self-Efficacy.* A scale created from the respondent's responses to four questions: Question 1: Do you think it's better to plan your life a good way ahead, or would you say life is too much a matter of luck to plan ahead very far? (0 = too much luck to plan, 1 = plan ahead), Question 2: When you do make plans ahead, do you usually get to carry out things the way you expected, or do things usually come up to make you change your plans? (0 = have to change plans, 1 = things work out as expected), Question 3: Have you usually felt pretty sure your life would work out the way you want it to, or have there been times when you haven't been sure about it? (0 = haven't been sure, 1 = pretty sure), Question 4: Some people feel they can run their own lives pretty much the way they want to; others feel the problems of life are sometimes too big for them. Which one are you most like? (0 = problems of life too big, 1 = can run own life). Responses create self-efficacy scale ranging from 0 to 4. Mean: 2.29, Standard Deviation: 1.26, Minimum: 0, Maximum: 4.

*Education.* Respondent's education: 1 = 8 grades or less, 2 = 9-12 grades, no diploma or equivalency, 3 = 12 grades, diploma or equivalency, 4 = 12 grades, diploma or equivalency plus non-academic training, 5 = Some college, no degree, 6 = Undergraduate degree, 7 = Advanced degree. Mean: 3.51, Standard Deviation: 1.75, Minimum: 1, Maximum: 7.

*Income.* Respondent's family income quintile. Mean: 2.96, Standard Deviation: 1.13,

Minimum: 1, Maximum: 5.

*Age.* The respondent's age in years. Mean: 45.62, Standard Deviation: 18.20, Minimum: 18, Maximum: 99.

*Party Contact.* Question: Did anyone from one of the political parties call you up or come around and talk to you about the campaign this year? 1 = Yes, 0 = No. Mean: .29, Standard Deviation: .45, Minimum: 0, Maximum: 1.

*Political Interest.* Question: Some people don't pay much attention to political campaigns. How about you, would you say that you have been/were very much interested, somewhat interested, or not much interested in following the political campaigns (so far) this year? 1 = not much interested, 2 = somewhat interested, 3 = very much interested. Mean: 2.17, Standard Deviation: .74, Minimum: 1, Maximum: 3.

*Religious Attendance.* Question: Would you say you/do you go to church or synagogue every week, almost every week, once or twice a month, a few times a year, or never? 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Every week or almost every week. Mean: 2.72, Standard Deviation: 1.17, Minimum: 1, Maximum: 4.

*Closing Date.* Number of days before the election that registration was closed. Mean: 26.16, Standard Deviation: 9.11, Minimum: 0, Maximum: 50.

### **Dependent Variables**

*Validated Turnout.* 0 = No record that respondent voted in the election, 1 = Record of respondent voting in the election. Mean: .64, Standard Deviation: .48, Minimum: 0, Maximum: 1.

*Self-Reported Turnout.* Question: In talking to people about the election we often find that a lot of people weren't able to vote because they weren't registered or they were sick or they just didn't have time. How about you, did you vote in the elections this fall? 0 = No, did not vote, 1 = Yes, voted. 1972: Mean: .73, Standard Deviation: .45, Minimum: 0, Maximum: 1. 1976: Mean: .73, Standard Deviation: .45, Minimum: 0, Maximum: 1.

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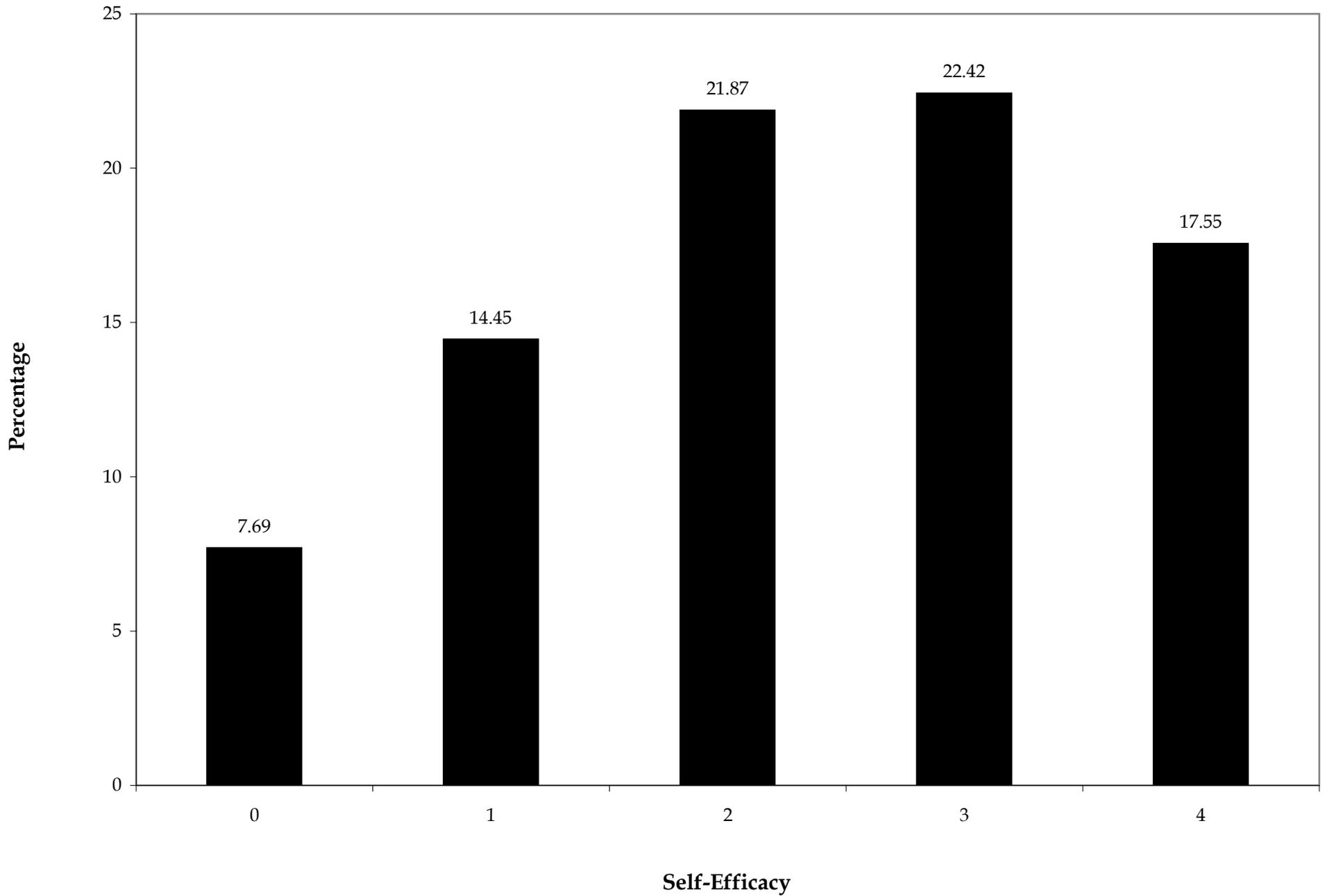
Table 1: Probit Estimates for Standard Model and Model Incorporating Self-Efficacy

	1	2
Perceived Closeness	.12 (.16)	.56 (.35)
Candidate Benefit	.00 (.00)	.00 (.01)
Perceived Closeness*Candidate Benefit	.01 (.00)	-.01 (.01)
Self-Efficacy		.26* (.13)
Self-Efficacy*Candidate Benefit		.00 (.00)
Self-Efficacy*Perceived Closeness		-.20 (.13)
Self-Efficacy*Perceived Closeness*Candidate Benefit		.01* (.00)
Education	.11* (.03)	.09* (.03)
Income	.20* (.04)	.18* (.04)
Age	.06* (.01)	.06* (.01)
Age Squared	-.00* (.00)	-.00* (.00)
Party Contact	.47* (.08)	.44* (.08)
Political Interest	.14* (.06)	.12 (.07)
Religious Attendance	.20* (.03)	.20* (.03)
Closing Date	.00 (.01)	.00 (.01)
Intercept	-3.29* (.39)	-3.66* (.53)
<i>N</i>	1386	1289
Log-likelihood	-761.71	-695.48
$\chi^2$	530.51*	506.29*

\*  $p < .05$ , one-tailed tests

Probit estimates with standard errors, clustered by state, in parentheses.

**Figure 1**  
**Distribution of Self-Efficacy and Perceptions of Closeness**



**Figure 2**  
**Increased Probability of Voting Due to Perceiving Election as Close**

