

# **Crashing the Party: The Impact of Strategic Voting in Primaries on Election Outcomes\***

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## **Abstract**

The effect of primary formats on voting behavior and candidate fortune has been the topic of recent political, academic and legal arguments. We address these debates by examining voter behavior and election outcomes across primary systems in the laboratory. While we find the rate of strategic voting is generally low, such behavior varies across primary formats and significantly impacts the outcomes of primary and general elections. Results suggest that more open primary systems generate more strategic voting, but contrary to expectations the more open systems do not necessarily lead to more moderate election winners. We find that strategic voting actually causes the semi-closed format to generate more moderate winners relative to other primary systems. Also, the semi-closed format is found to provide the greatest collective welfare for voters while the closed system yields the lowest welfare relative to other systems.

\*The authors would like to thank the University of Central Florida and Saint Lawrence University for partial funding of this research. Earlier versions of this paper were presented at the University of Rhode Island and the 2000 annual meetings of the Public Choice Society. Michael Margolis, Nick Rupp, and Jason Shogren provided valuable comments.

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*“[Strategic voting] is a clear and present danger.”*  
Supreme Court Justice Scalia, June 2000

## **1. Introduction**

Candidates for public office gain access to a general ballot by winning a party’s primary. While this is a common feature among parties in most American states, the exact format of a primary election differs substantially from state to state. Parties in some states let only party members decide which candidate to advance to the general election; parties in other states are less restrictive and let independents participate as well; parties in yet other states even allow members of other parties into their nomination process. The differences raise the question: How do the various primary rules impact voting behavior and election outcomes?

Recent developments in the electoral rich state of California have renewed legal, political and academic debates on this question. In March of 1996, California voters approved with a 59.5 percent majority Proposition 198, the adoption of a blanket primary format. Such a format allows each voter in a primary to vote for any candidate in an election regardless of party affiliation.<sup>1</sup> Opponents, including the major parties, responded with political and legal action. In an effort to minimize the impact of the blanket primary, opponents offered Proposition 3 to exclude presidential elections from the format. But the measure failed to win the voters’ support in the 1998 election. Concurrent legal efforts to overturn Proposition 198 also failed in a U.S. District Court and a Circuit Court of Appeals.<sup>2</sup> On June 26 2000, however, the Supreme Court ruled with a 7-2 majority that the blanket primary format was unconstitutional (*California Democratic Party v. Jones* [99-401]).<sup>3</sup>

In the meantime, the impact of primary formats received national interest when George W. Bush and John McCain battled for the 2000 presidential Republican nomination. Early in the process the underdog McCain was successful in states with more flexible primary systems that allowed independents to participate in primary elections.<sup>4</sup> Conversely, Bush won states that use more restrictive primary formats, and eventually he won the nomination of the Republican party.

The Bush-McCain episode shows that the stakes are high in this debate. The consequences of adopting one primary format over others may be large even though the impacts are not clear. Proponents of more open primary formats argue that these formats produce elected officials who better represent the electorate while opponents contend that non-party members should not influence party representation.<sup>5</sup> Opponents are concerned that non-party members may *raid* their party's primary—strategically vote for their party's weakest candidate to decrease the party's chances of general election success. Supreme Court Justice Scalia, citing expert testimony in his majority opinion, stated that “the prospect of having a party's nominee determined by adherents of an opposing party is far from remote—indeed, it is a clear and present danger.”

Said expert testimony puts the portion of crossover strategic voting in California and Washington (another state with a blanket primary format) as high as 25 percent, but this is inconsistent with the evidence presented in the literature. Studies on non-primary elections find the rate of strategic voting to range between 6 and 17 percent (Alvarez and Nagler, 2000), while the limited research on primary elections provides conflicting evidence on whether strategic voting or election outcomes actually differ across primary formats (Southwell, 1991; Gerber and Morton, 1998a).<sup>6</sup> Consequently, the impact of primary formats

on strategic voting remains unclear. And more importantly, whether such voting influences election outcomes is ambiguous.

We provide new evidence on these issues by undertaking the first experimental study of primary voting behavior and election outcomes.<sup>7</sup> In contrast to previous work that examines data from surveys or exit polls, our experimental design provides three key advantages: (1) we observe actual voting behavior based on real incentives rather than unmotivated responses to questionnaires; (2) we have a clean comparison of behavior and outcomes between primary institutions by holding everything else constant, e.g., voters' preferences and candidates' positions, and (3) we can determine the collective welfare of voters across primary formats since we have the positions of all voters and the winning candidates.

Our results indicate the significance of primary formats. Corresponding to previous work, strategic voting does occur—though at low levels. But even at low levels, we reveal new evidence that strategic voting can influence election outcomes. Contrary to the arguments of opponents and supporters of more open primary formats, findings indicate that more open primaries do not necessarily yield more moderate winners. In some cases, strategic voting causes open primary systems to generate more extreme winners than the restrictive, party-only primary format. Results, however, do support the claim that the restrictive, party-only primary system provides the lowest collective welfare for voters.

## **2. Primary Formats, Voting Behavior and Election Outcomes**

We focus on four primary institutions: closed, semi-closed, open and blanket. The major differences across formats revolve around whether non-party members can participate and whether voters are able to cross over party lines.<sup>8</sup>

*Closed Primary:* Party members can vote only in the primaries of their own party. Independents cannot vote in the primaries at all. A prerequisite of this format is that party members choose their party affiliation at least several days or weeks ahead of the primaries.

*Semi-Closed Primary:* As in the closed primary, party members can vote only in their own party but independents are able to declare a party affiliation just for the primary election and vote in all primary races of the party they have chosen.

*Open Primary:* On election day, all voters choose on which party's ballot they want to cast their vote—for example, Democrats can vote on the Republican ballot and vice versa. Once voters have made their decisions on party affiliation, however, they have to vote on that party's ballot for all races, office by office.

*Blanket Primary:* All voters, party affiliated and independent, get a single ballot with all candidates for each office on it. Voters cast a single vote for each office but do not have to vote along party lines.

In all four primary formats, the candidate receiving the most votes within each party becomes the nominee of his or her party—independent of whether one or more candidates in the other party receive more votes.<sup>9</sup> Given that primary formats are considered to be more open as the institutional rules are relaxed, the four primary systems are listed from least open (closed) to most open (blanket).

We first examine voting behavior across each of the four primary formats. Voters have two options: they can vote sincerely or vote strategically. *Sincere voting* is simply

casting a vote for the most preferred candidate within one's own party. *Strategic voting* entails casting a vote for a "less preferred" candidate. Since different motivations cause strategic voting behavior, this category is separated into two sub-classes: positive and negative. *Positive strategic voting* is supporting a "less preferred" candidate in one's own party because the candidate has a greater chance to win the general election. For example, a positive strategic voter supported Al Gore over Bill Bradley in the 2000 Democratic primaries even though her position was more closely aligned with the more extreme Bradley but she did not believe Bradley had a realistic chance to win the general election.<sup>10</sup> Conversely, *negative strategic voting* is casting a vote for the weakest candidate in the opposing party to increase the chances of the candidate from one's own party in the general election. For example, Republican party members casting a negative strategic vote in the 2000 Republican presidential primaries crossed over and supported the more extreme candidate (Bill Bradley) in the Democratic primary to increase the chances of the Republican nominee (Bush or McCain).

After determining whether primary formats influence the level of strategic voting, we investigate the impact of any strategic behavior on election outcomes across primary institutions. Party leaders and other opponents of non-closed primary formats express concerns that relate to both institutional rules and voting behavior. First, they fear the dilution of their party's nomination process, i.e., non-party members pulling a party to more moderate candidates. This may arise with and without strategic voting. The main thrust of this concern revolves around the median voter; how it affects the candidates' positions during the primary campaign and the eventual outcome of the primary. Second, the opponents of non-closed primary systems express concern of negative strategic voting—raiding. Only non-

closed primary formats allow raiding and only certain candidate positioning would invite such behavior.

But does voting behavior actually vary across primary formats? More importantly, does strategic voting in concurrence with the institutional rules influence primary and general election outcomes? The next section presents our hypotheses on voting behavior and election outcomes which we test to address these questions.

### **3. Hypotheses**

#### ***3.1 Voting Behavior***

Opportunities for negative strategic voting depend on the institutional rules of the four primary formats. In closed primaries, negative strategic voting can only occur when a party member raids her own party, which may arise if that moderate party member is actually closer to a moderate candidate in the opposing party because his or her own party's contest is between two extreme candidates. Semi-closed primaries do not change the opportunities for party members, but the inclusion of independents introduces additional opportunities for negative strategic voting. Open and blanket primaries have even more opportunities for negative strategic voting because all voters, party-affiliated and independent, have the opportunity to crossover.

The difference between open and blanket formats is less clear. While each format provides the same opportunities for negative strategic voting within a race, a voter has to commit herself to one party for all races in the open format. In the blanket format, however, a voter may vote across parties in an election—but not in a single race. Whether this difference leads to more negative strategic voting in the open or blanket format depends on two

competing factors. First, the inflexibility of the open format increases the cost of casting a negative strategic vote, which should reduce such behavior. But second, the inflexibility may provoke more negative strategic voting because any voter committing to cross-over for one race will be locked into such strategic behavior in other races that otherwise may not attract this voting behavior. The former account likely dominates when the election involves numerous races of similar importance, while the latter should dominate when the election involves one important race among a small number of races. Since races are generally heterogeneous, open formats may lead to greater levels of negative strategic voting than the blanket system. But generally, if voters recognize and seize negative strategic voting opportunities at significant levels, results will be consistent with our first hypothesis:

*Negative Strategic Voting Hypothesis: negative strategic voting will increase as the primary format becomes more open.*

Next consider positive strategic voting—casting a vote for a candidate who is more likely to win than the candidate the voter actually prefers to win. In general, opportunities for positive strategic voting are independent of primary format because the different voting rules do not affect the typical positive strategic voter—a relatively extreme party member choosing between the preferred extreme candidate that is less likely to win or the moderate candidate. But these voters are also likely to vote negatively strategic if given the opportunity—as in the case of open and blanket systems. Consequently, substantial negative strategic voting may crowd out any positive strategic voting in these two primary formats. Under this crowding out conjecture, significant levels of strategic voting—positive and negative—will yield results consistent with our second hypothesis:

*Positive Strategic Voting Hypothesis: positive strategic voting will be greater in closed and semi-closed primary formats relative to open and blanket primary formats.*

### **3.2 Election Outcomes**

We now turn to how strategic voting within different primary rules can influence the outcomes of primary and general elections—does one format produce more moderate election winners than others? This point is contentious. Proponents of more open primary formats argue that such formats yield winning candidates with positions closer to the median voter and therefore, arguably, welfare enhancing. If all people vote sincerely, the more open primary formats (semi-closed, open and blanket) should indeed produce, on average, more moderate winners relative to the closed system—without substantial differences among the more open formats.<sup>11</sup> Such a result is attributed to the institutional rules and not strategic behavior. As such, sincere voting (i.e., insignificant strategic voting) will therefore generate outcomes consistent with our third hypothesis:

*Sincere Voting Outcome Hypothesis: closed primary formats generate more extreme candidate winners relative to the other primary formats.*

With sufficient levels of strategic voting, however, results will differ from the above conjecture. Strategic voting effects would combine with the institutional effects. Specifically, positive strategic voting will generally increase the chances of more moderate candidates, and, as previously discussed in relation to the *positive strategic voting hypothesis*, this behavior should arise in greater numbers in closed and semi-closed primary systems. Negative strategic voting, which is possible for more voters under the open and blanket format, favors more extreme candidates. So relative to the predicted outcome assuming sincere voting (i.e., *sincere voting outcome hypothesis*), positive strategic voting can only lead

to more moderate winners in the closed and semi-closed formats while negative strategic voting can only result in more extreme winners in the open and blanket primaries. As such, if strategic voting occurs enough to influence election outcomes, the semi-closed format will yield more moderate winners relative to the other primary systems. Significant strategic voting will therefore produce outcomes consistent with our fourth hypothesis:

*Strategic Voting Outcome Hypothesis: the semi-closed primary format generates more moderate candidate winners relative to the other primary formats.*

Comparing our election outcomes to the two outcome hypotheses will isolate strategic voting effects from institutional effects on primary and general election outcomes. If results correspond with the *sincere voting outcome hypothesis*, then any strategic voting observed at the individual level is not sufficient to impact the final outcome. And strategic voting may not be noteworthy. Conversely, if results are consistent with the *strategic voting outcome hypothesis*, strategic voting not only exists but is also influential in deciding general election outcomes.

#### **4. Experimental Procedure**

Our experimental design consisted of four primary treatments: closed, semi-closed, open and blanket. Each treatment had 24 elections, and each election consisted of two races. Elections comprised two stages: the primary and general elections. In the primaries, two candidates from each party faced off in each of the two races with the candidate receiving the most votes advancing to represent the party in the general election.<sup>12</sup> In each election, candidates and voters were assigned a number between 1 and 100, which represented their position on a political scale. Voters and candidates with numbers between 1 and 45 were in

*Party A*, voters with numbers between 46 and 55 were *Party B* (independents), and voters and candidates with numbers between 56 and 100 belonged to *Party C*. The positions of the candidates were common knowledge and exogenously determined to replicate six general situations voters may face within an election race.<sup>13</sup> This allows us to uncover any specific situations that led to strategic behavior. Conversely, the positions for voters were private information and randomly drawn for each election to reflect the uncertainty and expectations faced by people making voting decisions. However, the normal distribution, from which the voter positions were drawn, was common knowledge.

Since candidate positions were exogenously determined, subjects participated only as voters choosing among a number of candidates. Naturally, voters prefer a candidate with a position closer to their own positions to win the general elections. This incentive was ensured by paying subjects according to the distance between their position and the winning candidate's position—the closer their position is to the winning candidate's position, the more money they earn. To better approximate the actual proportion of party members and non-members, we assigned nine people to each party (*A* and *C*) and five to the group of independents (*B*).<sup>14</sup> For each election, subjects were randomly assigned new positions and faced different combinations of candidate positions. But for control purposes, the voter and candidate positions in the 24 elections were the same in each primary treatment. For example, voters with the ID number 1 across primary treatments had exactly the same positions and faced the same candidates in each of the 24 elections. Controlling for voter and candidate positions across treatments allows any significant behavioral differences to be attributed to the primary format. Tables 1 and 2 summarize the voter and candidate positions across elections that were used in each primary treatment.

Figure 1 provides an example ballot from a closed primary election. This ballot was taken from the voter with the 4<sup>th</sup> lowest position in the second election—represented in column 4, row 2 in Table 1, and row 2 in Table 2. In this case, the voter was in *Party A* with a position of 21. Since the example uses a closed primary, the voter was restricted to vote in party A’s primary races. A sincere vote in this case means that the subject supports the *Orange* candidate in *Race 1* and the *Green* candidate in *Race 2*. Supporting the other candidates (*Blue* and *Black*) would represent positive strategic voting. There is no opportunity for negative strategic voting because the rules of the closed format do not allow cross-over voting. As with the remaining 551 cases represented in Tables 1 and 2, the voter and candidate positions for this case remain constant across primary treatments. The only change across treatments would be the options at the bottom of the ballot, which are dictated by the primary format rules. Under the blanket format, for instance, the ballot would offer all four candidates in each race for the voter to choose among. Note that casting a sincere vote would still entail supporting the *Orange* and *Green* candidates. But under the blanket format, voters are allowed to cross-over and cast a negative strategic vote (e.g., supporting *Red* in *Race 1* or *Brown* in *Race 2*).

Eighty-seven subjects were recruited from the student body of an American university to participate in the experiment. In an effort to enlist participants with previous voting experience, non-traditional students were targeted by recruiting subjects from evening classes.<sup>15</sup> There were 23 subjects in each primary treatment except for the closed treatment, which only required 18 subjects because independent voters do not participate in closed primaries. Thus, we observed 192 races in 96 primary elections—providing 4176 individual voting decisions.

Each treatment was conducted over two days. On the first day, the instructions were distributed and read aloud as subjects followed along. After all questions were addressed by the experimenter, subjects left with a copy of the instructions and the ballots for all 24 elections.<sup>16</sup> Two days later, the subjects returned their completed ballots indicating their votes.<sup>17</sup> According to the vote totals, the primary election forwarded two candidates, one from each party, to run in the general elections. Since there is no reason for any strategic voting in the two-candidate general election, we induce sincere voting in the general election. Hence, subjects did not vote in the general elections; rather the outcome of the general elections were determined by the median voter (i.e., the candidate closest to the median voter's position was declared the winner). Subjects were paid in cash according to their total earnings across all elections.

While many experiments are conducted behind the closed doors of a lab, we note several advantages of using a 'take-home' approach for our study. First, evidence exists that subjects are more careful and rational when given time to think in a comfortable setting (Baik et al., 1999). Second, we mitigate the learning effects often found in repeated voting games (Forsythe et al., 1996; Gerber et al., 1998)—a relevant concern because actual voting tasks are sparse, not lending itself to learning effects. The third advantage would normally be a flaw in many controlled experiments, but if subjects ignore the honor system by discussing different options the process better reflects the decision-making process in real elections.

## **5. Results**

## 5.1 Voting Behavior

We first review the observed voting behavior across primary formats at the aggregate level. As Table 3 reports, strategic behavior—positive or negative—occurred in nearly 10 percent of the votes cast across all formats. Results also suggest clear differences in behavior across primary systems. As expected, the open and blanket primary formats yielded more negative strategic voting than the closed and semi-closed systems. The closed primaries yielded the lowest number of negative strategic votes (10) and the open primary generated the most instances of such behavior (121 votes). The aggregate numbers are consistent with the *negative strategic voting hypothesis*.<sup>18</sup>

The numbers for positive strategic behavior also correspond to expectations. The raw data suggests that voters exercised greater levels of positive strategic voting in the closed and semi-closed primary formats than the open and blanket systems. Party members chose to vote positive strategically 46 and 55 times in the closed and semi-closed primaries, while doing so only 33 and 21 times in the open and blanket primaries. This result suggests that positive strategic voting will arise more frequently in the closed and semi-closed formats relative to the open and blanket primary systems—consistent with the *positive strategic voting hypothesis*.

We now empirically test our voting behavior hypotheses. The analysis investigates the individuals' decisions to vote sincerely or strategically in primary elections, and specifically, whether primary formats play a significant role in determining strategic voting. To do so, we estimate the following Probit model,

$$S_{ij} = \beta_0 + \sum_{f=1}^3 \beta_f \text{Format}_{f+1} + \varepsilon_{ij}$$

in which the dependent variable,  $S_{ij}$ , denotes strategic voting by the  $i^{\text{th}}$  voter ( $i = 1, 2, \dots, 87$ ) in the  $j^{\text{th}}$  primary election race ( $j = 1, 2, \dots, 48$ ;  $S_{ij} = 1$  if vote is strategic, 0 otherwise);  $Format_j$  are dummy variables representing the primary format faced by the  $i^{\text{th}}$  voter in the  $j^{\text{th}}$  race;  $\beta_0$  is the constant term and  $\varepsilon_{ij}$  represents the contemporaneous error term. Other key determinants of voting behavior, such as voter and candidate positions, are controlled within the experimental design, while individual effects were found to be insignificant.<sup>19</sup> The presented specification yields two models: a *positive strategic voting* model, which examines the decision to cast a positive strategic vote, and a *negative strategic voting* model, which examines the decision to vote negative strategically.

Table 4 presents the estimated coefficients and slopes from the negative and positive strategic voting models. First, we examine negative strategic voting behavior. As expected, results indicate that semi-closed, open and blanket primary formats significantly increase the likelihood of negative strategic voting relative to the closed format (omitted baseline). The open format is the most conducive system for negative strategic voting with an estimated slope of 0.15—indicating the likelihood of casting a negative strategic vote is 15 percentage points higher in an open primary than a closed format. Estimates also indicate the probability of people casting a negative strategic vote in blanket and semi-closed primary formats increase 8.4 and 3.5 percentage points relative to the closed primary format. The open primary format therefore has nearly twice the impact as blanket relative to the closed system ( $p < 0.000$ ). And the blanket format has over twice the relative impact of the semi-closed format ( $p < 0.000$ ). Interestingly, the open and blanket estimates are consistent with our conjecture that the inflexibility of the open primary induces more strategic voting rather than deterring such behavior. Results provide strong support for the *negative strategic voting*

*hypothesis*, suggesting that raiding occurs at statistically significant levels when voters have the opportunity.

Results concerning positive strategic voting also provide evidence of significant strategic behavior. Recall that the opportunities for positive strategic voting were independent of primary format, and *ceteris paribus*, such voting behavior should be similar across all formats. But since open and blanket primary rules introduce the potential for negative strategic voting, we expect a difference to arise between the two groups and no difference within each group. Estimates suggest that positive strategic voting is not significantly different across closed and semi-closed formats ( $p=0.733$ ) or across open and blanket primaries ( $p=0.099$ ). But estimates do indicate a significant difference between the two groups ( $p<0.000$ ). Furthermore, the more open group yielded significantly fewer cases of positive strategic voting relative to the closed and semi-closed pair—suggesting that raiding does cut into the presence of positive strategic voting. Voters in certain situations appear to choose between negative and positive strategic voting; many times they opt to raid the opposing party instead of casting a positive strategic vote. Findings therefore support the *positive strategic voting hypothesis* and provide additional statistical evidence that strategic voting (negative and positive) occurs at significant levels.<sup>20</sup>

## **5.2 Election Outcomes**

Since we observed significant levels of strategic voting, the key question is now whether such behavior influences primary and general election outcomes. The answer can either enhance or diminish the arguments raised by the opponents and supporters of more open primaries.

In each primary race two candidates competed for each party's nomination. Since opposing candidates did not share identical positions, one candidate is relatively *more moderate* and the other is relatively *more extreme*. To explore the impact of strategic voting behavior across primary formats, we examine which of the two candidates—more moderate or more extreme—wins across various situations. We isolate the impact of strategic voting from the institutional influence by comparing the actual election outcomes to those generated by sincere voting. While comparing election outcomes across primary systems from sincere voting will indicate institutional effects, comparing election outcomes between actual and sincere voting will reveal whether strategic voting influences election outcomes—specifically, strategic voting is noteworthy if outcomes are consistent with the *strategic voting outcome hypothesis*.

Table 5 provides the aggregate data regarding the election winners across primary formats. The table provides the outcomes realized from actual votes cast in our elections and the outcomes that would have arisen if all people had voted sincerely. Consider first the outcomes with sincere voting. In the primary elections, the more moderate candidates won considerably fewer elections in the closed primary format relative to the other, more open primaries. There were 41 more moderate winners in the closed primary while the semi-closed, open and blanket formats yielded 56, 56 and 58 more moderate winners. The general election outcomes are similar under sincere voting. The closed primary format produced 21 more moderate winners while the other formats yielded 31 or 32 more moderate winners. The numbers of more extreme winning candidates are more striking. While the more open primary formats produced only 8 or 9 relatively extreme candidates, the closed primary produced 27 such candidates. The aggregate numbers from sincere voting correspond closely

to the *sincere voting outcome hypothesis*, which suggests the institutional effects support more extreme winners in the close primary format relative to the other three formats.

Now we explore the outcomes realized from actual voting behavior to determine whether they correspond with sincere voting outcomes or the predicted outcomes from strategic behavior. As illustrated in Table 5, substantial differences across sincere and actual voting are evident in some primary formats. The semi-closed and open systems exhibit the largest disparity between sincere and actual voting outcomes, which indicates that these primary formats turn out the most influential strategic behavior. In the closed format, positive strategic voting assisted more moderate candidates under actual voting. The blanket primary outcomes show only small differences between sincere and actual voting outcomes.

Comparing actual outcomes across primary formats further indicates the influence of strategic behavior. In the semi-closed format, the more moderate candidate won more primary and general elections than the other primary formats. While the more moderate candidate won 64 primary elections in the semi-closed format, such candidates won only 44, 40 and 58 primary elections in the closed, open and blanket formats. The semi-closed primary also produced relatively more moderate winners in the general election—though the magnitude is diminished. The numbers from actual voting behavior are consistent with the *strategic voting outcome hypothesis*, which indicates that strategic behavior was influential in election outcomes.

Moving to a conditional analysis of individual election outcomes, we use a Probit analysis to test the hypotheses on election outcomes. The analysis investigates whether primary formats play a significant role in determining primary and general election outcomes. The following model is estimated

$$MM_j = \beta_0 + \sum_{f=1}^3 \beta_f Format_{f+1} + \varepsilon_j$$

in which the dependent variable,  $MM_j$ , denotes that the more moderate candidate won the  $j^{\text{th}}$  election race ( $j = 1, 2, \dots, 48$ ;  $MM_j = 1$  if the more moderate candidate won, 0 otherwise);  $Format_f$  are again dummy variables representing the primary format in the  $j^{\text{th}}$  race;  $\beta_0$  is the constant term and  $\varepsilon_j$  represents the contemporaneous error term.<sup>21</sup> Two models are estimated: a *primary election* model examines primary election outcomes while a *general election* model considers general election outcomes.

Table 6 presents the estimated coefficients and slopes from the primary and general election outcome models. Results provide empirical evidence that strategic voting impacts primary and general election outcomes. Recall that outcomes from sincere voting would generate more moderate winners in the semi-closed, open and blanket primary formats relative to the closed system (*sincere voting outcome hypothesis*), and that influential strategic voting will cause more moderate winners in the semi-closed primaries relative to the other formats (*strategic voting outcome hypothesis*). Findings are generally consistent with the latter case.

In both models, the estimates indicate the semi-closed format has a greater impact on generating more moderate candidates than the other primary systems. Specifically, estimated slope-coefficients imply the likelihood of electing a more moderate candidate increases by nearly 26 percentage points under semi-closed rules relative to the closed system. In both the primary and general elections, the success of more moderate candidates was significantly greater in the semi-closed format relative to the closed systems ( $p < 0.000$  for primary;  $p = 0.004$  for general) and open systems ( $p = 0.001$  for primary;  $p = 0.025$  for general). And while the

estimated slope coefficients indicate that the semi-closed format is more supportive of the more moderate candidate relative to the blanket format, the difference is not significant at conventional levels ( $p=0.356$  for primary;  $p=0.143$  for general). Additional results suggest that the open primary format does not generate more moderate winners at significantly different levels than the closed format ( $p=0.869$  for primary;  $p=0.553$  for general), while results are mixed when comparing open and blanket formats ( $p=0.400$  for primary;  $p=0.011$  for general). The conditional results therefore correspond closely with the *strategic voting outcome hypothesis*—indicating that strategic voting influences election outcomes.

This conclusion, however, does not necessarily support the arguments of opponents and supporters of more open primaries. While strategic voting occurs enough to sway election outcomes, the dilution of the outcomes emerges only in the semi-closed format. Results actually indicate that open primaries generate more extreme winners relative to the semi-closed and closed formats. Previous work has indeed reported that Republican members of Congress elected from open primary states are more extreme on average than their closed primary counterparts (Gerber and Morton, 1998a).

### **5.3 Voter Welfare**

An additional benefit of exploring voting behavior and outcomes in the lab is that we can uncover how various outcomes impact the welfare of voters. Since the positions of voters and candidates are induced within the experimental design, we are able to calculate a collective welfare measure for all voters. The measure we use here is based on the assumption that collective welfare increases when voters' positions are closer to the position of the winning candidate. Consequently, the measure is simply the sum of distances between

each voter's position and the winning candidate's position, whereby the welfare is larger when the sum is smaller. By examining this notion of welfare across primary systems, we can determine which format provides the best result for the sum of voters, i.e., the situation where the winning candidate better represents, on average, all voters.

Table 7 provides the welfare measures across voter affiliation and primary format. The blanket primaries would produce superior outcomes if every person voted sincerely. But as the previous discussion illustrated, strategic voting is influential. When comparing welfare from actual voting behavior, the semi-closed primary format produced the best outcome for the sum of voters. And semi-closed was even best among party members and independents. The blanket format, however, yielded a result not far from the semi-closed result. Across both sincere and actual voting, the closed format provided the lowest welfare for independents and party members. These normative findings correspond to previous suggestions that non-closed primary formats, especially semi-closed, are preferable under the assumption that welfare depends only on the unweighted sum of distances between winning candidate's and voters' positions (Gerber and Morton, 1998a). Interestingly, the numbers suggest that proponents of more open primaries may not benefit from the open and blanket formats and the opponents to more open primaries may not benefit from the closed format; rather a compromise to accept a semi-closed format may be advantageous to both sides of the debate.

## **6. Conclusions**

Recent events have reinvigorated the debate over primary institutions. Party leaders are concerned that their primary will be 'raided' with strategic voting by non-party members

and diluted by their participation. We use controlled laboratory settings to gain additional understanding of individual behavior under the incentives provided by the different primary formats. Our results indicate that strategic voting does occur—though not in large numbers. But we find that even low levels of strategic behavior can influence the election outcome. Contrary to the arguments of proponents and opponents of more open primaries, findings reveal that more open primaries do not necessarily yield more moderate winners. Open primaries can actually produce fewer cases of more moderate winners relative to closed primaries. Results also suggest that semi-closed primaries provide the largest collective welfare while closed primaries provide the least.

Future work should include candidate endogeneity—allow candidates to adjust their positions according to the primary format. A second consideration is the potential for strategic registering. While this is unlikely to occur in closed, open and blanket formats because candidate positions are uncertain at the time of registration, the semi-closed format provides the incentive to register as an independent to allow them a choice once the candidates and their positions are revealed to voters. To do otherwise, the voter is locked into voting in a single party's primary election.

## Endnotes

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1. Proposition 198 was also called the Open Primary Initiative, even though there is a slight difference between an open and a blanket primary format as will be discussed later.
2. The U.S. District Court for the Eastern District of California (984 F. Supp. 1288, 1298—1299 [1997]) and the U.S. 9<sup>th</sup> Circuit Court of Appeals (169 F.3d 646 [1999])
3. In an earlier case (*Tashijan v. Republican Party of Connecticut* [479 U.S. 208 (1986)]), the Supreme Court had decided against the power of a state to impose a certain primary format on its parties.
4. The Republican party of California itself, uncertain of the legal status of its primary election, agreed on a one-time compromise for the presidential primary: all voters, regardless of party affiliation, were allowed to vote in the Republican primary and all votes were counted, but only the votes of registered Republicans contributed towards the selection of delegates.
5. In the *California Democratic Party v. Jones* case, proponents proffered six additional interests in support for the blanket primary: expanding candidate debate beyond the scope of partisan concerns, ensuring that disenfranchised persons enjoy the right to an effective vote, promoting fairness, affording voters greater choice, increasing voter participation, and protecting privacy. Transcripts of syllabus, majority opinion, concurring opinion (by Judge Kennedy) and dissenting opinion (by Judge Stevens) of this case can be found under <http://supct.law.cornell.edu/supct/html/99-401.ZO.html>.
6. Cox (1997) provides an excellent overview of strategic voting opportunities in electoral institutions worldwide.

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7. While the lab has not been used to explore strategic voting in primary elections, experimental work has explored related issues such as voting behavior in three-candidate general elections (Forsythe et al, 1996; Gerber et al, 1998), foreign policy decision making (Geva et al, 2000), the impact of endorsements on uninformed voters (Williams, 1994), the impact of primary systems on candidate entry (Gerber and Morton, 1998b), vote trading and the value of voting rights (McKelvey and Ordeshook, 1980; Guth and Weck-Hannemann, 1997).
  8. For a more precise description of the formats see Gerber and Morton (1998a).
  9. A fifth primary format, *non-partisan*, ignores party affiliation by forwarding the two top vote-getting candidates to the general election if no candidate receives more than 50% of the votes. The non-partisan format does not present any incentives for crossover strategic voting and the format is uncommon among U.S. primary systems (only used in Louisiana). We therefore omit the non-partisan format from our analysis.
  10. Positive strategic voting also received considerable attention in the general election of the 2000 presidential race when Ralph Nader supporters were torn between voting sincerely for Nader or voting positively strategic for Gore to decrease the chance of a George W. Bush victory. See Gerber et al. (1998) and Forsythe et al. (1996) for studies related to strategic voting in general elections.
  11. This assumes that independent voters are less extreme than party members.
  12. All ties in the experiment were broken by a coin flip.
  13. The six situations are different combinations of extreme (E) and moderate (M) candidates, in which extreme candidates have positions of 20 or less for *Party A* and 80 or more for *Party*

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C. For example, a race may have one party offering two extreme candidates (E vs. E) and the other party offering two extreme candidates (E vs. E). The remaining five variations are: E vs. E and E vs. M; E vs. E and M vs. M; E vs. M and M vs. E; E vs. M and M vs. M; M vs. M and M vs. M.

14. Morton and Williams (1999) had 2 x 10 party-affiliated voters and 4 independents in their experiment.

15. Not only does this assist the subjects to understand the experiment, it also provides a closer correspondence between our subject pool and the relevant population.

16. Since subjects could use the instructions as a reference, it was more detailed in the presentation—including a detailed example of the primary and general election process. The instructions are available from the authors upon request.

17. Reminders were used to ensure all ballots were returned on the specified date

18. We also examined strategic voting across primary formats in real terms where we account for the opportunities to vote strategically provided to the voters. The data revealed that voters took advantage of fewer opportunities to vote negative strategically as the primary rules became more open. The results therefore indicate that while the absolute numbers support the hypothesis that negative strategic voting increases as the primary format becomes more open, such voting behavior actually diminishes in real terms. One conjecture may be that decreased flexibility may induce more strategic behavior. This point, however, is extraneous to policy issues that are solely concerned with absolute impacts; thus we omit this part of the analysis from our discussion.

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19. The presented reduced form is therefore preferred over the random effects Probit model.

And as with the panel model, the Logit specification provides equivalent results to those presented herein.

20. Examining the impact of specific candidate positioning on strategic voting reveals intuitive results. In the closed and semi-closed format, positive strategic voting was more likely when both parties' primary election involved at least one moderate candidate—indicating that voters recognized that nominating the more moderate candidate is especially advantageous for the party when the opposing party may nominate a moderate candidate. In the open and blanket format, negative strategic voting was more likely when one of the party's primary election involved two moderate candidates—implying that voters choose to raid the opposing party's primary when they are relatively content with either candidate in their own party's primary.

21. If there was a tie between the more moderate and more extreme candidates, the race was excluded from the analysis.

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**Table 1. Voter Positions by Party and Election**

	Party A									Party B					Party C								
<b>Election 1</b>	2	3	9	19	22	23	30	36	43	46	49	51	53	55	56	58	78	87	91	92	93	98	99
<b>Election 2</b>	5	5	7	21	23	32	33	44	45	46	47	50	52	55	57	69	73	79	81	82	85	91	98
<b>Election 3</b>	1	14	18	19	20	20	34	38	42	48	48	48	49	54	59	66	67	78	93	94	94	96	99
<b>Election 4</b>	8	10	12	13	13	17	29	31	32	48	50	51	52	55	63	66	74	76	82	87	94	98	99
<b>Election 5</b>	11	20	21	21	25	27	34	40	42	46	48	49	55	55	61	64	67	72	74	78	87	91	97
<b>Election 6</b>	1	1	12	24	28	32	33	40	41	47	47	52	54	54	56	57	68	70	76	87	90	94	97
<b>Election 7</b>	3	9	17	37	39	39	39	44	45	51	51	53	55	55	65	74	75	76	80	87	91	92	93
<b>Election 8</b>	11	11	17	21	22	24	29	37	43	46	46	47	52	53	60	65	74	79	82	86	90	96	100
<b>Election 9</b>	8	12	14	22	25	26	31	32	38	48	48	50	54	54	56	59	74	81	84	88	94	95	98
<b>Election 10</b>	1	16	19	23	28	30	30	37	40	46	52	52	54	55	58	60	67	74	75	82	96	97	98
<b>Election 11</b>	9	20	23	33	37	40	40	40	43	47	48	51	51	54	57	63	67	68	70	75	86	86	87
<b>Election 12</b>	11	12	16	19	21	21	25	35	40	47	48	48	50	55	56	58	61	65	78	88	88	89	90
<b>Election 13</b>	8	10	14	17	22	22	32	33	44	46	46	48	49	55	58	64	66	66	70	89	91	98	100
<b>Election 14</b>	9	15	18	25	26	27	40	42	44	46	48	48	50	50	59	67	70	72	75	77	79	84	94
<b>Election 15</b>	15	19	28	31	32	39	39	43	45	46	48	48	54	55	61	63	67	73	75	79	89	93	97
<b>Election 16</b>	4	8	10	15	15	34	37	39	42	48	49	52	53	54	57	59	61	71	72	79	81	82	88
<b>Election 17</b>	12	14	17	19	20	29	33	43	45	46	47	48	51	53	69	72	80	87	87	90	93	100	100
<b>Election 18</b>	3	10	11	11	13	29	29	36	45	47	49	49	52	54	58	72	75	78	82	83	84	87	96
<b>Election 19</b>	4	5	5	7	14	16	16	30	33	48	49	52	53	53	77	78	81	82	83	86	97	100	100
<b>Election 20</b>	9	11	12	13	25	35	38	40	45	47	51	53	53	54	57	57	65	69	78	79	85	87	99
<b>Election 21</b>	10	12	17	25	27	28	35	41	44	47	49	52	53	55	56	74	76	76	76	86	90	95	100
<b>Election 22</b>	2	7	7	13	14	14	18	30	34	50	50	51	54	55	57	66	67	74	79	82	82	91	92
<b>Election 23</b>	6	20	24	26	33	36	39	39	40	47	50	51	53	55	58	59	63	70	77	80	85	88	95
<b>Election 24</b>	3	3	3	4	22	23	25	31	40	46	46	47	48	53	58	63	68	71	77	81	86	93	94

**Table 2. Candidate Positions by Party, Race and Election**

	Race 1				Race 2			
	Party A		Party C		Party A		Party C	
	Orange	Blue	White	Red	Green	Black	Yellow	Brown
Election 1	10	20	80	90	10	20	65	85
Election 2	30	40	65	85	30	40	60	70
Election 3	30	40	80	90	10	20	80	90
Election 4	30	40	65	85	15	35	60	70
Election 5	15	35	80	90	10	20	80	90
Election 6	15	35	65	85	30	40	60	70
Election 7	10	20	80	90	30	40	65	85
Election 8	30	40	60	70	30	40	80	90
Election 9	10	20	60	70	10	20	80	90
Election 10	30	40	65	85	10	20	60	70
Election 11	10	20	80	90	15	35	60	70
Election 12	10	20	60	70	30	40	80	90
Election 13	10	20	80	90	15	35	65	85
Election 14	15	35	65	85	15	35	60	70
Election 15	15	35	80	90	30	40	80	90
Election 16	15	35	60	70	10	20	60	70
Election 17	10	20	65	85	15	35	80	90
Election 18	30	40	80	90	15	35	65	85
Election 19	15	35	80	90	15	35	65	85
Election 20	30	40	60	70	10	20	65	85
Election 21	10	20	65	85	30	40	65	85
Election 22	15	35	60	70	10	20	65	85
Election 23	30	40	60	70	10	20	80	90
Election 24	15	35	80	90	10	20	60	70

Figure 1. Example Ballot from the Second Closed Primary Election

<b>PRIMARY ELECTION #2</b>	
<b>YOUR POSITION IS <u>21</u> AND YOU ARE A MEMBER OF <u>PARTY A</u></b>	
<b><u>RACE 1</u></b>  <b>Party A</b> Orange 30 Blue 40  <b>Party C</b> White 65 Red 85	<b><u>RACE 2</u></b>  <b>Party A</b> Green 30 Black 40  <b>Party C</b> Yellow 60 Brown 70

<b>Ballots for Party A:</b>	
<b><u>You have one vote in Race 1:</u></b> Which candidate do you wish to vote for (circle one):	<b><u>You have one vote in Race 2:</u></b> Which candidate do you wish to vote for (circle one):
Orange      Blue	Green      Black

**Table 3. Voting Behavior by Primary Format and Voter Affiliation**

	All Voters	Party Members	Independents
Closed			
Sincere	808	808	--
Negative Strategic	10	10	--
Positive Strategic	46	46	
Semi-Closed			
Sincere	1020	803	217
Negative Strategic	29	6	23
Positive Strategic	55	55	
Open			
Sincere	950	735	215
Negative Strategic	121	96	25
Positive Strategic	33	33	
Blanket			
Sincere	1020	782	238
Negative Strategic	63	61	2
Positive Strategic	21	21	

**Table 4. Probit Estimates on Strategic Voting: The Impact of Primary Formats**

Variable	Negative Strategic Voting		Positive Strategic Voting	
	Coefficient	Slope	Coefficient	Slope
Semi-Closed	0.332** (0.144)	0.035	-0.032 (0.095)	-0.002
Open	1.057*** (0.130)	0.150	-0.268*** (0.103)	-0.019
Blanket	0.691*** (0.135)	0.084	-0.460*** (0.113)	-0.030
Constant	-2.271*** (0.120)		-1.614*** (0.071)	
-----				
$\chi^2$ (p-value)	121.56 (0.0000)		24.05 (0.0000)	
LogL	-818.14		-650.58	
N	4176		4176	

standard errors in parentheses unless otherwise noted

\*\* and \*\*\* indicate statistical significance at the 5 and 1 percent levels

**Table 5. Primary and General Election Outcomes by Primary Format and Voting Behavior**

Outcome	Sincere Voting		Real Voting	
	Primary Election	General Election	Primary Election	General Election
Closed				
More Moderate	41	21	44	27
More Extreme	55	27	52	21
Semi-Closed				
More Moderate	56	31	64	34
More Extreme	31	9	24	6
Open				
More Moderate	56	31	40	24
More Extreme	31	9	45	15
Blanket				
More Moderate	58	32	58	32
More Extreme	26	8	28	12

Note: Except for closed primaries, the numbers of Primary Winners and General Election Winners in each do not add up to 96 and 48, respectively, due to ties.

**Table 6. Probit Estimates on Election Outcomes: The Impact of Primary Formats**

Variable	Primary Election Outcomes		General Election Outcomes	
	Coefficient	Slope	Coefficient	Slope
Semi-Closed	0.709*** (0.192)	0.258	0.841*** (0.291)	0.256
Open	0.031 (0.187)	0.012	0.161 (0.272)	0.055
Blanket	0.525*** (0.189)	0.196	0.399 (0.269)	0.132
Constant	-0.105 (0.128)		0.157 (0.182)	
-----				
$\chi^2$ (p-value)	20.56 (0.0001)		9.56 (0.0227)	
LogL	-231.51		-105.69	
N	355		177	

standard errors in parentheses unless otherwise noted

\*\* and \*\*\* indicate statistical significance at the 5 and 1 percent levels

**Table 7. Voter Welfare by Primary Format and Voting Behavior<sup>♦</sup>**

		Sincere Voting	Actual Voting
Closed			
	Party members	27,425	26,919
	Independents	5,494	5,144
	All	32,919	32,063
Semi-Closed			
	Party members	26,161	25,740
	Independents	4,424	4,108
	All	30,585	29,848
Open			
	Party members	26,161	26,564
	Independents	4,424	4,878
	All	30,585	31,441
Blanket			
	Party members	25,693	25,832
	Independents	4,109	4,261
	All	29,802	30,093

<sup>♦</sup>as measured by the sum of absolute distances between voters' and general election winners' positions