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## **Does the Electoral Connection Link the Branches?: Legislative Responsiveness to Executive Elections**

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**Does the Electoral Connection Link the Branches?**  
**Legislative Responsiveness to Executive Elections**

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**Abstract.** Do legislators and potential legislative candidates respond to the signals that executive election results send about constituent preferences? This paper takes advantage of the natural experiment provided by California's 2003 recall election – held at the midpoint of the state's legislative session – to test theories about the strategic entry of candidates and the ideological mobility of legislators. First, we show that a surge in support for one party in an executive election can help that party recruit more experienced legislative candidates than usual, while qualified leaders in the other party are discouraged from running in districts where the surge is particularly strong. Second, we show that legislators in the weakening party, particularly those in the most competitive districts, will moderate their behavior after the executive election results signal their electoral vulnerability.

“[M]embers of Congress die in their ideological boots. That is, based upon the roll call voting record, once elected to Congress, members adopt an ideological position and maintain that position throughout their careers.”

– Keith Poole, “Changing Minds? Not in Congress!”, 1998.

The prevailing view of legislators’ ideological positions sees them as fixed characteristics that remain stable from session to session. A host of research supports Poole’s contention, showing that neither switching offices (Grofman, Griffin, and Berry 1995) nor deciding to retire (Lott 1987; Lott and Bronars 1993; Van Beek 1991) nor representing redrawn districts (Poole and Romer 1993; Poole 1998) causes legislators to budge.<sup>1</sup> We investigate whether another causal force – the signal about a shift in voter positions broadcast by an executive election – brings any change in legislator positions.

When one party surges in a presidential or gubernatorial race, how do legislators from the other party respond? Do they maintain their well-worn ideological positions until the process of electoral natural selection eliminates those who are not fit for the new political age? Or are legislators, as we contend, a bit more Lamarckian, adapting to their new environment in order to survive the next election? Put another way, do the Downsian forces that pull candidates toward the median voter in a district exert their influence only once, or do legislators repeatedly update their positions to keep in line with their constituents?

Our claim that legislators’ voting behavior will respond to signals sent by executive elections is rooted in the observation that presidents often appear to respond to legislative election results, as Bill Clinton did with moderate proposals after the 1994

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<sup>1</sup> These findings of ideological stability are buttressed by Levitt’s (1996) research, which shows that senators rely overwhelmingly on their (fixed) ideologies, rather than changing constituent preferences or party pressures, when casting votes. Yet several studies have called these findings of ideological fixity into question. Hibbing (1986), for example, discovers that U.S. representatives alter their roll call voting behavior when they plan to run for a Senate seat, and Crook and Hibbing (1985) show that congressional committee chairs shifted their voting patterns to raise their party support scores when reforms of the 1970s made these chairs subject to election within their caucus. Several authors have found evidence of legislative “shirking” (abandoning district representation) in the final terms of retiring legislators (Figlio 1995; Snyder and Ting 2003; Tien 2001). It additionally appears that roll call voting loses its ideological consistency in “partyless” legislatures, as Jenkins (2000) and Wright and Schaffner (2002) found in their studies of the Confederate Congress and the Nebraska unicameral legislature, respectively.

“Gingrich Revolution.” When presidents shift course after a midterm congressional election, it is clear that they are reacting to the results of contests in which they were not directly involved.

By contrast, it is hard to tell whether legislators (and their potential challengers) respond to what voters say in executive branch elections. Legislators, after all, receive multiple signals during the same election. They hear what people say about a president or governor, and can pore over the results of that contest in their district. But because their names typically appear on the same ballot, they also hear what voters have to say about them directly. If strategic politicians react by changing their behavior, it is difficult to discern what they are reacting to after an election. Do they respond solely to the voters’ collective judgment about their performance as a legislator? Do they heed the independent message sent by executive election results? Are they attempting the complicated task of decoding the meaning of top-of-the-ticket coattails?<sup>2</sup>

The 2003 California gubernatorial recall and its aftermath offer a unique<sup>3</sup> natural experiment to test whether legislators and other strategic actors respond to signals from an election in which they were not directly involved. In the October 7<sup>th</sup>, 2003 contest, voters were given the chance to cast judgment upon the state’s governor but not on its legislators. The recall fell roughly midway through the 2003-2004 legislative session, and its results were very much on the mind of California politicians throughout 2004. Most important, the results of the recall signaled a clear repudiation of the status quo in a

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<sup>2</sup> If there were no coattails, we could view legislative and executive elections as independent signals, making it easier to see how legislators respond to each. But if there were no coattails, there would be no incentive for legislators to respond to the executive signal. Coattails are at once the motivation for studying this phenomenon and a factor complicating research designs.

<sup>3</sup> While the circumstances of California’s recall and the characteristics of its candidates are certainly unique, the signal that it sent – that many voters shifted their support from one party to the other – is quite common in democratic politics. The resulting shifts in legislative positions that we find here should be evidence of a general phenomenon that could be further investigated in state politics by using the datasets on gubernatorial approval and legislative roll calls that have now been made available by researchers at the University of North Carolina and at Indiana University, respectively. These more general tests, though, would lack the unique feature of the recall that is most useful to our research design: the executive election was held independent of any legislative contests, allowing us to isolate the effects of its signal.

state led almost exclusively by Democrats.<sup>4</sup> The percentage of California voters casting their ballots in favor of a Republican rose from 42.4% in the 2002 governor's race to 62.1% in the 2003 race to replace Davis (Shelley, 2002c, 2003a).

Because the recall sent a strong signal of Republican resurgence in the middle of a legislative session, it provides a good test case for examining the reactions of legislators and their potential opponents. It isolates the effect of the executive election result, allowing us to examine changes in legislative behavior over a period in which no legislative election took place. We begin this investigation in Section I by providing more detail on the natural experiment presented by the recall. We then identify two changes that we think the signal sent by the Republican surge should have brought to legislative politics in California, and test our predictions. First, in keeping with the Kernell and Jacobson's (1983) findings from Congressional elections, the recall should have changed the strategic entry calculus of potential state Assembly candidates in California. It should have encouraged local Republican officeholders to jump into Assembly contests in 2004 by signaling that this would be a good year for them to run. Democrats who could be "high quality" candidates, by contrast, should have been discouraged and stayed out. Our analysis, presented in Section II, demonstrates that experienced Republicans were in fact more likely to run in 2004 than one might otherwise predict, and that the Democratic Party had an unusually tough time recruiting candidates who had held previous office.

Second, we test our claim that legislators who had reason to be threatened by the results of the recall adapted by shifting their ideological positions. Section III compares the voting behavior of California Assembly members in the first half of the 2003-2004

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<sup>2</sup> At the time of the recall election, Democrats held majorities in California's Assembly and Senate and held all eight major statewide elective offices. Republican power was limited to control of two seats on the five-member Board of Equalization and sufficient numbers in each legislative house to stop budget and tax bills that needed 2/3 support to become law.

Session to the year's worth of votes<sup>5</sup> that they cast after the October 7 special election. We use estimates of legislator ideal points obtained from all roll calls cast on the Assembly floor, and check our findings against a three past sessions divided in the same manner to ensure that they are not artifacts of a normal first-to-second-year shift. We show that, in keeping with our expectations, Arnold Schwarzenegger's victory in the recall and his explicit campaign to influence legislators appeared to move Democrats, especially those who were most vulnerable to challenge, to the right. We conclude by considering the implications of our findings for the ways in which the electoral connection links the executive and legislative branches, for the subtle manner in which representation sometimes occurs, and for the literature on the stability of legislators' ideological positions.

## **The Natural Experiment of California's Recall**

When Gov. Arnold Schwarzenegger called California lawmakers "girlie men" at a political rally in the summer of 2004, his Saturday Night Live-inspired put down was only one part of the message he attempted to send to his uncooperative state legislature. The mere presence of this international celebrity in a San Bernardino County mall was aimed at reminding the legislators stalling his plans in Sacramento of how popular he was in their districts. It was also an attempt to hark back to the October, 2003 recall. During that election, voters in 18 Assembly districts held by Democrats cast a majority of their ballots in favor of removing Democratic Gov. Gray Davis. The two Republican replacement candidates, Schwarzenegger and Tom McClintock, won a combined majority of the vote in 23 Democrat-held seats (Shelley, 2003a). Gov. Schwarzenegger's jibe, delivered in one of these districts, sought to highlight the legislators' electoral

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<sup>5</sup> Indeed, analyzing a full year's worth of votes is required to answer this question correctly. A preliminary version of this study prepared was conducted before hundreds of key bills were voted on in the final two weeks of the legislative session, and found that Democratic legislators generally moved leftward after the recall. That result is reversed once the full set of roll calls votes is analyzed.



vulnerability in order to force concessions during a policy standoff. This paper investigates how successful he was, and in the process explores more general questions about the links between constituent preferences, elections, and legislative behavior.

The causal factor uniting all of our analysis is the signal sent by an executive election. California's 2003 special election sent a clear signal that voters had soured on the state's top Democratic leaders since November, 2002.<sup>6</sup> Gray Davis, who had won a 47 to 42% victory in his reelection campaign less than a year before, was recalled by a 54 to 46% margin. The two leading Republicans in the replacement contest combined to capture 62.1% of the vote, with moderate Arnold Schwarzenegger winning 48.6% and conservative Tom McClintock taking 13.5%. Lt. Governor Cruz Bustamante, a Democrat who had been reelected to that post with 49.4% of the vote in 2002, drew a mere 31.5% in the race to replace Davis (Shelley, 2002c, 2003a). Seventy-three percent of Californians at the time agreed with the statement that the state was "seriously off on the wrong track" (Times Poll, 2003) and only 19% approved of the job the Legislature was doing (DiCamillo and Field, 2004). Looking at these figures and the results of the recall, Democrats in the Legislature had reason to be worried.

The theory behind our expectation that gubernatorial election returns should spur a response by those in legislative districts is straightforward. Executive election results convey information about what a district's voters want. They are like a poll that is specific to the district and broadcast to everyone. If they provide new information that updates the message of the last legislative election, officeholders as well as those who covet their positions should adjust their behavior. These adjustments should be especially sharp in the districts where the executive election shift is particularly strong.

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<sup>6</sup> Although our analysis is focused on the case of the California recall, there is much variation in our key causal factor. The signal that executive elections sent about voter sentiment varies from 2002, when Democrats captured every statewide office, to 2003, when they were roundly defeated in the recall. The strength of the 2003 signal also varied considerably across legislative districts, as Section II shows, with voters in some areas moving much more sharply to the Republican column than voters in other seats.

The first reaction that we expect from the inhabitants of a legislative district should come in the entry decisions of potential legislative candidates. Those considering a run for the seat, especially high-quality contenders with office-holding experience, should respond to the executive election's signals about their chances. This theory follows the logic outlined in Kernell and Jacobson's (1983) study of strategic entry by congressional candidates. Potential candidates whose party performed well in the executive contest will be more likely than normal to enter a race, while those in the party that suffered will tend to stay away.

We test this prediction in California by asking whether the results of the recall altered the strategic calculations of potential challengers who were deciding whether or not 2004 would make a good year to run for the Legislature. Our models, presented in the next section, explore trends in the chances that each party will be able to nominate an experienced, "high quality" nominee. Comparing patterns in the 2002 and 2004 primaries, we find significant shifts in candidate quality. In cases where the recall sent a strong message of Republican resurgence, the Republican Party was more likely to produce a nominee with prior office holding experience while the Democrats were less likely to find a high quality candidate.

The second reaction that an executive election should spur is an adjustment in the voting behavior of legislators. Its results can inform legislators about a shift in where the median voter in their district is located. If every member seeks to serve as a delegate for his or her constituents, then all legislators should move in the signaled direction. If legislators only respond to a public swing when it changes their reelection chances, then only members in competitive districts should respond.

To test this prediction in California, we shift our focus from the state's 80 Assembly districts to its capitol. After beginning with a friendly approach that included calling Sacramento's top legislative leader "a great human being" (Ainsworth, 2004),

Gov. Arnold Schwarzenegger responded to a budget stalemate with a campaign aimed at reminding an uncooperative Legislature about the lessons of his 2003 victory. He focused his attention on those legislators with the greatest incentives to respond to the recall's electoral message. In July, 2004, Schwarzenegger visited six competitive Assembly districts to convince the Democrats who held them to compromise on the budget or be "terminated" at the polls (Bluth, 2004). In a Long Beach diner, he warned that "Judgment day is in November. I want the people to know that in November is the election. If they're not satisfied with the budget, then there will be a lot of new faces after the November election." Commenting on these trips, his communications direction mused, "We'll see how [legislators] respond after tasting steel for 72 hours" (Nicholas and Halper, 2004). Finally, the governor attracted national attention at an Ontario mall by saying that the legislators opposed to his budget were "girlie men" (Ainsworth, 2004).

Vulnerable Democrats did not quickly crumble on the budget. But our analysis shows that in the roll call votes that they cast after the recall, Democrats in competitive seats moved much closer to the center than they were in the year leading up to the recall. Our parallel analyses of three previous sessions show that this is not the result of a natural election year effect. The political impact of this ideological shift can be seen in votes such as the repeal of a bill that would have granted driver's licenses to undocumented immigrants.<sup>7</sup> It appears to represent a significant change in the behavior of California legislators, caused by an executive election.

## **The Recall and Strategic Candidate Entry Decisions**

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<sup>7</sup> In the most obvious shift in voting behavior brought by the recall, many Assemblymembers reversed their position on Senate Bill 60, which would have allowed the Department of Motor Vehicles to issue driver's licenses to California residents who did not have a legal presence in the United States. This bill passed on the Assembly floor by a 44 to 31 vote, was signed by Davis on September 5<sup>th</sup>, 2003, and became a lightning rod for criticism during the recall campaign. Governor Schwarzenegger made its repeal one of his first priorities, and the bill to repeal it, SBX3, passed by a 64-9 margin in the Assembly and was signed on December 2, 2003, before SB60 ever went into effect (Legislative Counsel, 2005).

Did the Republican surge made evident by the recall make legislative races more attractive to Republican local officeholders in 2004 than they were in 2002? If so, we should observe a *ceteris paribus* increase in the chances that Republicans nominated experienced candidates for the Assembly,<sup>8</sup> with the rise being especially large where Republican candidates performed particularly well in the recall's replacement race. Conversely, strategic Democrats should have been scared off by the lack of support for their party's standard bearers. If they took the signal that their party received in 2003 personally, then the 2004 primaries should feature fewer experienced Democrats than might otherwise be expected. Because Assembly candidates for both parties' nominations had to declare their intention to run in 2004 by a November 10, 2003 deadline, the results of the October 7, 2003 recall election should have weighed heavily in their minds (Shelley, 2004d). This section presents the results of models that test for shifts in the strategic calculations of Assembly challengers from both parties.

Our models use the same sort of measure that is featured in Kernell and Jacobson's (1983) empirical tests of their theory of strategic candidate entry: Whether or not each party's nominee<sup>9</sup> in an Assembly district had previously held elective office.<sup>10</sup>

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<sup>8</sup> In this section and in all of the empirical analyses presented here, we look exclusively at California's 80-member Assembly and not at its 40-member Senate. Because elections for the Senate's four-year terms are staggered, only 20 of its seats were contested in 2004. In these seats, nine incumbents were prevented from running for office because of term limits (California Journal and Statenet, 2004). While the 11 incumbents eligible for reelection in 2004 should in theory respond to the signals of the recall in the same way that Assembly members did, there are simply not enough cases here to estimate models of their behavior and of the actions of their challengers.

<sup>9</sup> Because of the difficulty in finding comprehensive biographic information on those who ran in a primary but lost, our empirical analysis examines whether the eventual nominee was a quality candidate rather than whether the primary field contained any quality candidates. Sometimes quality candidates lose in the primary, and our coding scheme would fail to count them. But our approach will bias estimates in favor of our theory about the effect of the recall surge on the appearance of high quality candidates in only one set of circumstances: If Democratic primary voters systematically turned against elected officials in 2004, while at the same time Republican voters decided that they especially valued office-holding experience and gave quality candidates a higher win rate in their 2004 primaries. We believe it is exceedingly unlikely that this is the case.

<sup>10</sup> An earlier draft of this paper also explored variation in the number of candidates running in each party's primary, but did not find any significant changes brought by the recall. The divergence between our findings on candidate quality and quantity may be because high quality potential candidates are more likely to be motivated by strategic factors than other candidates. Perhaps there is simply a constant supply of activists, gadflies, and ambitious novices willing to run for office in California, regardless of the politic climate. High quality candidates, because they may be risking the office that they hold or their political reputation, have to bide their time until conditions are most favorable. High quality candidates also, for the most part, won their initial offices – and their “quality” designation – precisely because they possessed a strategic outlook, knowing

Using biographical sources,<sup>11</sup> we categorized each major party's nominee in 2002 and 2004. We coded as "high quality" those who currently or previously held public office in California, most frequently a school board, city council, or county supervisor seat, but in some cases a seat in the state legislature or in Congress. We coded nominees who had never held political office (including college students, businessmen, actor/activists,<sup>12</sup> or mediator/sky divers) as "low quality." We created another category, "mid-quality," for those elected or appointed to a minor office or elected to a county party's central committee.<sup>13</sup> Since we divide our measure into three categories of increasing quality, but are unwilling to assume that the jump from a "low quality" to a "mid-quality" candidate is as large as the next step up to a "high quality" nominee, we estimate ordered probit models in the analysis that follows.

Our models for each party use the same analytical strategy and contain the same sets of explanatory variables. Our approach is to combine data on the 2002 and 2004 Assembly primaries, include the characteristics of a race that give a baseline expectation for its candidate quality, and then look to see if the Republican surge in 2003 pushed the measures above (for Republicans) or below (for Democrats) these normal expectations. We do this separately for each party. Our models use party registration levels in a district,<sup>14</sup> the presence of an incumbent,<sup>15</sup> the average household income in the district,<sup>16</sup>

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when to contest races and when not to. Viewed from this logic, it makes some sense that the Republican surge in the recall sent a message that was heard by those with an incentive to be attuned to the political mood, but missed by the politically tone-deaf.

<sup>11</sup> For 2004 nominees, our biographical information came from *The California Targetbook*, a district-by-district analysis prepared for the press and political consultants (Hoffenblum, 2004). For each 2002 nominee, we compiled biographical information from the profiles posted at [www.smartvoter.org](http://www.smartvoter.org) and [www.calvoter.org](http://www.calvoter.org) and from searches on [www.google.com](http://www.google.com) identifying nominees as Assembly candidates. Our lists of nominees came from Shelley (2002a, 2004a).

<sup>12</sup> The reader probably has not heard of Paul Morgan Fredrix, the Republican nominee for the Hollywood/Beverly Hills-based 42<sup>nd</sup> Assembly District in 2004, who is an actor, activist, and attorney. But the reader may have seen him play opposite Erik Estrada in the 1999 feature film, *Anaconda 2: King Cobra*.

<sup>13</sup> Members of county party central committees in California are selected by that party's registrants during primary elections. The appointive positions that we categorized as "mid-quality" include local planning boards, community college trustee boards, and port commissions.

<sup>14</sup> We measure a district's party registration by the Democratic share of major party registration at the last reporting deadline before each primary (Shelley 2002b, 2004b). This should be the principal signpost telling potential candidates whether or not they are in friendly political territory. In the Republican strongholds of Orange County, suburban San Diego, and in the state's sparsely-populated north, favorable partisan

and the district's racial and ethnic composition<sup>17</sup> to predict baseline levels of candidate quality. These control variables and their hypothesized effects are described in footnotes. The key causal variables that we focus on in this section, though, measure the strength of the signal sent by the October, 2003 recall results that 2004 might be a good year for Republicans.

To capture this signal, our models include a dichotomous variable indicating that an observation represents a race from the 2004 election (rather than from 2002) as well as an interaction between this year indicator and a measure of the magnitude of the Republican surge. We calculate the magnitude of the surge in each district by subtracting the Republican gubernatorial vote percentage in 2002 from the parallel figure in 2003. This specification allows the effects of the recall to vary with the size of the political change that occurred in a district. Predictions about candidate entry decisions in a district will thus be a function of the sum of the coefficients of the year indicator and of our quantification of the Republican surge. Because the November, 2002 general election was held under traditional rules, it featured a single Republican nominee, Bill Simon, who won 42.4% of the statewide vote. Among the 135 candidates who qualified for the ballot in the recall replacement contest were 42 Republicans, but Arnold Schwarzenegger and Tom McClintock were the only ones who attracted more than 0.3% of the vote. Together, they won 62.1% of the statewide vote, and the combined support for the

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composition should encourage higher quality Republican candidates to enter. The pattern should be reversed in strongly Democratic districts in Los Angeles and the San Francisco Bay Area.

<sup>15</sup> The presence of incumbents, who rarely lose in either primary or general elections in California, should discourage potential candidates of both parties from running. Our models also allow the intimidating power of incumbency to vary with the incumbent's voting behavior, measured by the first-dimension NOMINATE estimate of his or her ideal point in the first half of the legislative session. We interact the presence of an incumbent with this figure to see whether, controlling for a district's partisanship, challenger decisions are influenced by the positions of incumbents seeking reelection.

<sup>16</sup> We measure a district's average household income in thousands of dollars, (Statewide Database, 2004), and hypothesize that richer districts may give local officeholders access to the resources to make a serious bid for the Assembly, encouraging them to run.

<sup>17</sup> We record the percentages of each district's residents who are black, Latino, or Asian-Pacific Islander (Statewide Database, 2004), and expect that districts containing more members of each racial and ethnic group will be more attractive to Democratic candidates and will be less likely to feature high quality Republican contestants.

centrist Schwarzenegger and the conservative McClintock captures the overall enthusiasm for Republican candidates in 2003. Our “Republican Surge” variable reports the percentage point increase from Simon’s share to the Schwarzenegger/ McClintock total, for each district.<sup>18</sup> Because it comes from multiple candidates covering a broader ideological area than Simon did, it overestimates the absolute shift in popular preferences. Still, this is acceptable for our purposes if it accurately reflects the relative sizes of those shifts across districts.

California’s Secretary of State reports the results of statewide contests by Assembly districts in the *Supplement to the Statement of Vote* (Shelley 2002c, Shelley 2003a), and it is these figures that we use. The average surge was 18.6 percentage points, and the standard deviation across the 80 districts was 4.2 points. The weakest surge, of 2.2 percentage points, came in San Francisco’s strongly Democratic 13<sup>th</sup> Assembly District, where the recall itself was defeated by an 83-17% margin. The strongest surge, 26.4 percentage points, came in the San Bernardino-based 62<sup>nd</sup> Assembly District, a strongly Democratic part of Southern California’s “Inland Empire” where Bill Simon had performed poorly in 2002 but where Schwarzenegger and McClintock together won a clear majority. This is just the sort of district in which the recall results may have motivated formerly-pessimistic Republicans to re-evaluate their chances and throw their hats into the ring.

Did the political opportunities heralded by the recall results make it more likely that Republicans would nominate high-quality candidates in 2004 than in 2002, controlling for the other district characteristics that help to predict candidate quality?

Table 1 presents the results of our ordered probit models as first differences detailing the effects of shifts in explanatory factors on the probability that a party’s

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<sup>18</sup> Although the Republican surge seems to us the most natural way to capture the signal sent by the recall, one could just as well look at the Democratic decline. Across Assembly districts, the drop from Gray Davis’ 2002 share of the vote to leading Democratic replacement candidate Cruz Bustamante’s share correlates with our Republican surge measure at  $r=0.98$ .

nominee will be a high quality candidate.<sup>19</sup> These first differences are based on the coefficient estimates contained in Table 2, but we will discuss first differences since they present results in a more intuitive manner. Table 1 reports the effects for a baseline election held in 2002 in a district with no incumbents and with mean levels of Democratic registration (62.3%), income (\$63,995), Latino population (35.4%), black population (7.5%), and Asian-Pacific Islander population (12.5%).<sup>20</sup> The first column presents results for the 119 Republicans nominated in races without a Republican incumbent, while the second column reports findings for Democratic quality in the 95 races without a Democratic incumbent.<sup>21</sup>

We find evidence consistent with our theory that that the entry decisions of experienced politicians were influenced by the information contained in the recall results, albeit in a more subtle way than we expected. For both Republicans and Democrats, the impact of the recall is contingent upon the size of the Republican surge. In the Republican model, the raw coefficient of the 2004 year indicator (representing the predicted change in candidate quality between 2002 and 2004 in an imaginary district with no recall surge) was negative and significant, while its interaction with the size of

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<sup>19</sup> These models also produced estimates of the effects of explanatory variables on the chances that a nominee will be “mid-quality,” but we do not report first difference estimates for this additional category. One of the assumptions of our ordered probit models is that that factors that make a party more likely to nominate a high quality candidate (compared with a low quality candidate) also make it more likely to nominate a mid-quality candidate. Our faith in this assumption was bolstered when we estimated multinomial logit models that relax this assumption, and saw that conditions making high quality candidates more likely also made mid-quality candidates more likely.

<sup>20</sup> The model predicted that Republicans a district like this nominated a low quality candidate with a probability of 46%, a mid-quality candidate with a probability of 21%, and a high quality candidate with a probability of 33%. In fact, in the 119 Republican primaries that did not feature an incumbent, the party eventually nominated a low quality candidate in 70 cases, a mid-quality candidate in 18 cases, and a high quality candidate 31 times. For Democrats, the model predicted probabilities of 38% for nominating a high quality candidate, 26% for a mid-quality, and 36% for a low quality nominee. Overall, high quality candidates were nominated in 29 districts, minor or appointed officeholders won 17 nominations, and those with no experience at all accounted for the remaining 49 nominees.

<sup>21</sup> We exclude races with an incumbent from our sample because they provide no information to test our theory. We want to see whether or not the recall surge influenced the entry decisions of quality candidates waiting in the political wings. Observing that races that already feature an incumbent, who is by definition a high quality candidate, result in the nomination of a high quality candidate tells us nothing about strategic entry decisions. Instead, we focus on the races where an open nomination tempts experienced entrants, and see if the recall results added or detracted to that temptation.



the surge was positive and significant.<sup>22</sup> Combining these figures into predicted effects for different types of districts reveals that Republican candidates were encouraged where the recall surge was stronger than average, but discouraged (compared to 2002) where it was weaker. The first two rows of Table 1 combine these effects, showing how Republican candidate quality in 2004 differed from 2002 in districts where the recall surge was one standard deviation above its mean and then one deviation below. Where Schwarzenegger and McClintock did particularly well, Republicans were 15% more likely to nominate a high quality candidate. In districts where they did particularly poorly, the nominee was 16% less likely to have major elective experience. Although the 95% confidence intervals around these first difference estimates contain zero, both are constructed from the statistically significant coefficients of the year indicator and its interaction with the Republican surge, which have countervailing effects.

Some of the other factors help to explain this variation, though their effects are often on the borderline of statistical significance. Shifting the level of Democratic registration from one standard deviation below its mean to one standard deviation above seems to scare off high quality candidates, making them 21% less likely to emerge. Yet this effect is not quite statistically significant, and neither is the presence of a Democratic incumbent, regardless of his or her voting record. In line with our expectations, Republicans are less likely to nominate a high quality candidate in districts with many Latino voters, but none of the other control variables seems to exert an influence here.

Just as experienced officeholders from the Republican side were tempted into Assembly primaries where the recall surge was strong, quality Democrats appear to have bowed out of races if the 2003 results boded badly for them. The second column of

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<sup>22</sup> In the model of Republican candidate quality, the coefficient of the year 2004 indicator is -2.18 with a 1.08 standard error, while the coefficient of its interaction with the size of the recall surge is 0.11 with a 0.05 standard error. In the Democratic candidate quality model, the raw coefficients and standard errors are 2.96 (1.55) for the year indicator and -0.17 (0.08) for its interaction. The coefficients for other variables are reported in Table 2.

Table 1 shows that the Democrats were 26% less likely to get a high quality nominee in 2004 in districts where the recall surge was strong. On the other hand, where Schwarzenegger and McClintock did worse than average, Democrats were more likely to nominate an experienced candidate in 2004 than in 2002. Other aspects of a race's political context showed strong effects in the hypothesized direction. Experienced candidates were 43% more likely to emerge where party registration figures promised them an electoral advantage. The presence of a Republican incumbent in the district decreased the chances of a quality nominee, though this effect was much stronger (28% compared with 11%) when that incumbent's ideal point was one standard deviation to the right of the average for Republican incumbents than it was when the incumbent was left of average. None of the demographic characteristics of districts that we measured appears to have influenced the quality of Democratic nominees.

Our major finding here is that the Republican surge in the 2003 recall sent a signal that the pool of high quality Assembly candidates heeded. In districts where that surge was strong, Republicans were more likely to nominate candidates with prior experience while Democrats were less likely to have a high quality nominee, all other political factors being equal. Returning to the case of the 62<sup>nd</sup> Assembly District, the Democratic-leaning seat in San Bernardino County where Schwarzenegger and McClintock's combined vote in 2003 was 26.4% higher than Simon's in 2002. In that year, the model predicted only an 8% chance that the Republicans would have an experienced nominee, and they in fact nominated a business owner. In 2004, after the recall surge, the model predicted a 52% probability that Republicans would nominate a quality candidate, and they were able to recruit a school board member.

## **The Recall and Legislative Voting Behavior**

As high quality Republican candidates emerged to challenge them, did Democratic incumbents moderate their voting patterns in response to the electoral threat signaled by the recall? Did Republican incumbents, less likely to face experienced Democratic opponents in 2004 than they were in 2002, shift away from the center as they became more confident that they would win reelection? The change in challenger quality provides one reason to believe that legislators should change their behavior after the recall. Perhaps a more powerful prediction comes from the way that the recall communicated a shift in constituent preferences that altered political incentives in Sacramento.

Many political observers expected Democratic legislators to shift to the right after the recall, with especially strong shifts coming in the competitive districts where the recall's Republican surge could translate into a real electoral threat. Key strategists clearly identified these seats. Republican consultant Dan Schnur predicted that "Every one of the Democratic legislators in districts that voted for Schwarzenegger 'is going to have to campaign as if they are vulnerable'" (Vogel, 2004). Still, some of those advising Democratic Assemblymembers provided reasons why they should not be swayed. Democratic consultant Darry Sragow argued that "[Schwarzenegger's] popularity is fairly unique to him, his base is unique to him, and I think the sense on the Democratic side is that while he cannot be taken lightly, there's no fear that he's going to eat the minds of the voters" (Rau, 2004). As Schwarzenegger toured the state warning vulnerable Democrats that they would pay an electoral price if they failed to vote with him on the budget, state Democratic Party Chair Art Torres said of Schwarzenegger: "He consistently threatens; he never produces" (Nicholas and Halper, 2004).

In the appendix, we present a simple model of incumbent positioning in elections that demonstrates formally the existence of conditions under which incumbents would be expected to be responsive to perceived changes in the location of their median voters and

conditions under which *ex ante* safer incumbents would shift less than incumbents representing more electorally safe districts. Interestingly, while these two predictions are quite intuitive, the conditions under which they hold is less general than one might imagine, as we demonstrate in several counter-examples. Nevertheless, there are micro-theoretical foundations supporting the prediction that Democratic incumbents would move to the right in response the recall election and that Democrats from more marginal districts would be expected to move more.

Our empirical analysis, presented below, reveals that the recall threat did produce significant Democratic moderation. Surprisingly, Republicans also moderated, although to a lesser extent. While moderation in the second year of the term (the one ending with Assembly elections) might be expected to occur even without the recall, we show that no such moderation took place in the year preceding the 2002 election. Indeed, we find somewhat more partisan polarization in 2002 than 2001. We estimate that moderation by Democrats in the post-recall period increased the expected number of Democrats siding with the majority of Republicans on closely contested roll calls by one to two votes on average and by as many as 6 to 8 votes in some cases.

The research design presented in this section is more straightforward than our comparison of the 2002 and 2004 primaries, with their shifting casts and political conditions. We examine the behavior of the same individuals, California's 80 Assemblymembers, before and after the recall took place. This is a basic "interrupted time series" design, and while we probe for treatment effects we will also have to consider some standard threats to validity (Campbell and Ross, 1968) such as maturation and regression to the mean.<sup>23</sup> In order to estimate the ideological locations of the

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<sup>23</sup> Since the October 7, 2003 recall was held at the midpoint of the 2003-2004 Session, it divides the collection of floor votes into off-year and election year votes. Suppose we observe Democratic legislators moving toward the political center. This could be a response to Schwarzenegger and McClintock's strong showings, or the result of a maturation process, a natural drift of both party's members to the center in the second half of a legislative session. Another possibility is that we see Republican legislators who had relatively moderate voting

California's 80 Assembly members, we applied Poole and Rosenthal's NOMINATE procedure for recovering legislators ideological positions from their roll call votes. We compiled the results of all 1,901 roll call votes taken during 2003 and 2004 in which at least two members voted on the losing side. Of these roll calls, 903 (47.5%) were taken before the recall and 998 (52.5%) were taken after the recall. Because the underlying ideological dimensions recovered by NOMINATE for two separate sets of roll call votes are not comparable, we could not simply apply NOMINATE to the pre-recall votes and separately apply NOMINATE to the post-recall votes and then measure the change in each Assembly member's location. In order to locate each Assembly member pre- and post-recall in the same space, we assumed that the electoral prospects of Assembly members representing the 27 safest districts<sup>24</sup> would not be affected by the recall and thus these members would not change their voting behavior subsequent to the recall.<sup>25</sup> We then estimate a single NOMINATE model in which separate ideal points are estimated for the 53 unconstrained members and a single ideal point is estimated for the 27

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records before the recall moving back toward their party's mean position in the second half of the session. This could be evidence that they felt safer after the recall demonstrated Republican strength, or it could simply reflect a regression to the mean that is often seen in repeated tests. To guard against these threats to inference, we analyze roll call behavior in three other sessions, divided up into first year and election year voting records.<sup>24</sup> We defined "safe" seats, somewhat arbitrarily, as those in which Democratic voters made up at least 70% of major party registrants and those in which Republicans made up at least 60%. We employed this asymmetric measure of competitiveness because Kousser's (1996) analysis of California Assembly districts and election results shows that fewer Republican voters are needed to produce a given percentage of the vote because they turn out at higher rates and exhibit greater party loyalty.

<sup>25</sup> If no members changed positions across the pre- and post-recall periods, then our identifying constraints are innocuous, so our procedure is consistent under the null. On the other hand, if all members changed positions (including the ones that we constrain), then the changes in positions that we estimate will be (more or less) changes relative to the changes in the positions of the members whose locations we fixed. If, for example, the Democratic party members whom we constrained actually moved in the same direction as the unconstrained Democrats, we would underestimate the true Democratic response, because our estimates would only be capturing the differences between the moves made by the unconstrained members relative to the constrained members. On the other hand, it is also possible that the positions of the Democrats that we left unconstrained remained fixed and the Democrats that we assumed fixed actually moved in the opposite direction to our estimates (became more extreme). This is a fundamental identification problem in the estimation of spatial locations from observed vote choices. The identifying assumption must be maintained, and while consistent with theory, is largely untestable. However, our faith in our results is bolstered by their robustness when we use another criterion to constrain members. In addition to constraining the 27 safest members, we reran the analysis fixing those members who due to California's term limit law could not run again for the Assembly. The results are substantially similar to those reported in the text. However, because termed out Assembly members often contest other electoral offices in similar districts (Yang 2002, Osborne 2004) subsequent to being termed out of the Assembly, we decided that constraining safe district members was the more justifiable constraint.

constrained members. Because the constrained members pin down the location scale and rotation of the issue space across the two periods, the ideal points and other NOMINATE parameters are comparable across the two periods and we can meaningfully consider changes in the ideal points of the unconstrained members across periods.

The fit of the NOMINATE model to the Assembly roll call voting is exceptionally strong. A single dimension correctly classifies 95.5 percent of the votes and reduces classification error over a naïve model in which all members vote with the majority by 84.1 percent. Adding an additional dimension increases model fit by only 0.2 percentage points. We find in the California Assembly unidimensional voting behavior that exceeds that found in the contemporary US Congress, which is touted as being as unidimensional as it has ever been (Poole and Rosenthal 1997). For example, Poole finds that a single dimension correctly classifies 92.1 percent of U.S. Senate votes and reduces prediction error by 79.6 percent, while a second dimension increases classification by one percentage point (Poole personal correspondence). Due to this very strong unidimensionality, in what follows we consider only changes in members' first dimension NOMINATE scores.

Figure 1 presents our NOMINATE estimates of Assembly members' locations. The solid dots are point estimates of the left-right position of each Assembly member before the recall. The open dots represent the left-right positions of Assembly members after the recall. Members having only solid dots were constrained to have a single position across the two periods. The line going through each point is a 95 percent confidence interval estimated using the parametric bootstrap procedure described in Lewis and Poole (2004). The members are arranged from most conservative (prior to the recall) at the top of the figure to most liberal at the bottom.

As hypothesized, Democratic members moderated in response to the recall. Indeed, every unconstrained Democrat is estimated to be more conservative in the post-

recall period than in the pre-recall position. For many of these members, the confidence intervals of the estimates for each period do not overlap, revealing the high degree of statistical significance of those shifts. (Of course, statistical significance at the 95% confidence level does not require that the confidence intervals be non-overlapping.) For all but one of the 32 unconstrained Democrats, the rightward shift is significant at the 95% confidence level in a two-tailed test. The estimated average shift in the Democrats positions was 0.20 with a confidence interval of 0.18 to 0.22, or approximately 10 percent of the distance between the most liberal and most conservative member (defined by NOMINATE as -1 and 1 respectively).

Contrary to our expectations, Assembly Republicans did not move rightward following the recall. Indeed many of the Republicans moderated significantly. Of the 21 unconstrained Republicans, 13 shifted significantly to the left. None moved significantly to the right. Overall, we reject a null of no movement for 97 percent of Democrats and 62 percent of Republicans, despite the smaller standard errors associated with the estimated positions of Republicans. For Republicans on average, the leftward move was estimated to be -0.08 with a confidence interval of -0.10 to -0.075. Thus, the Republican moderation was only about half as large on average as the post-recall moderation shown by Democrats.

To determine the statistical significance of the average shifts in Democratic and Republican positions, we constructed 500 datasets in which the 1,901 contested Assembly roll calls were randomly divided into pseudo pre and post subsets. Each pseudo pre and post period contained the same number of votes as were taken in the actual pre- and post-recall period. Constraining the positions of the same 27 safe members, we estimated the change in the unconstrained members' locations across the pseudo pre and post recall periods in each of the 500 constructed datasets. Under the null hypothesis that there was no change in Assembly member's ideal points following the

recall, the estimated changes in ideal points that we found across the two periods should be similar in magnitude to the changes found in our 500 random partitions. On the other hand, if the observed change were atypical of the randomly drawn partitions, we will reject the null hypothesis that the legislators maintained consistent positions after the recall.

The distribution of the estimated changes across the 500 constructed data sets is presented in Figure 2. The solid dot in each panel represents the change in the average position for the given party between the actual pre- and post-recall periods. For both Democrats and Republicans, the observed shift between the pre- and post- recall periods was considerably larger than the shift found in any of the 500 random partitions allowing us to reject, at a 99.8% confidence level, the null hypothesis that the observed change could result from random variation.

Figure 2 here

If the shift in voting patterns between 2003 and 2004 is real, can we be sure that it was caused by the recall? Particularly because both the Republican and the Democratic caucus moderated in the post recall period, a reasonable alternative hypothesis<sup>26</sup> is that this moderation is not due to the extraordinary politics of the recall, but rather is the result of a normal political pressure to moderate in the period immediately preceding an election (see Figlio 2000, Cain and Kousser 2004). In order to investigate the possibility that moderation of position in the second year of an Assembly session is the norm, we collected California Assembly roll call voting data from 2001-2002. As we did for the 2003-2004 term, we split the votes into pre- and post-October 7<sup>th</sup> periods and constrained the electorally safest members' positions to be fixed across the two periods. The

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<sup>26</sup> Another alternative explanation – that the shift in legislative behavior was caused by a shift in the legislative agenda when Gov. Schwarzenegger came to office – seems less plausible. In California, governors do not have the ability to shape the legislative agenda formally by introducing or sponsoring bills. They may attempt to informally influence the agenda, but legislative leaders have the ability to resist these moves. The major issues that the California Legislature dealt with in the year following the recall, such as a budget deficit, workers' compensation, driver's licenses for undocumented residents, and consumer privacy, were the same issues that it considered in the year leading up to the recall.



estimated NOMINATE positions of members of the 2001-2002 Assembly are shown in Figure 3.<sup>27</sup> Overall, the shifts observed in the second half of the 2001-2002 session are considerably smaller than those found in 2003-2004. And, far from moderating, members of both parties actually became more partisan in the second year of the 2001-2002 session.

While the comparison of 2003-2004 to 2001-2002 does not definitively rule out the possibility that the shifts in position observed in the 2003-2004 session were due to something other than the recall, the comparison does cast considerable doubt on the leading alternative hypothesis of second-year moderation. Further evidence against the hypothesis of second-year moderation is presented in Table 3. Considering all roll calls cast between 1997 and 2004, we find that not only is the average shift in the positions of Assembly Democrats significantly larger in 2003-2004 than it is for either caucus in 2001-02, but it is also significantly larger than for either caucus in 1997-98 or 1999-2000. Moreover, 2003-04 is the only legislative session in which the Democrats, the majority party throughout this time period, moderated.

Table 3 here

What are the substantive magnitudes of these statistically significant shifts? As noted above, the average shift in Democratic members' positions was about 10 percent of the ideological range. In terms of the variation within the Democratic caucus, the change appears even more important. The average shift in the positions of Democratic members from the pre- to the post-recall period was 1.7 times as large as the standard deviation of the pre-recall Democratic positions. Consider the case of John Laird, a Santa Cruz Assembly member who was the third most liberal Democrat in the year before the recall. After the 2003 contest, his ideology shifted so far rightward that it was more conservative

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<sup>27</sup> A single NOMINATE dimension correctly classifies 95.0 percent of the 2001-2002 vote choices with proportionate reduction in error of 80.2 percent. Adding another dimension only increases the fit by 0.4 percentage points.

than the pre-recall positions of all Democrats but the party's four most moderate members. And these moderates in competitive districts – Lou Correa, Barbara Matthews, Nicole Parra, and Joseph Canciamilla – moved especially far to the right after the recall.

A more concrete way to measure the degree to which changes in position were substantively important is to pose the following hypothetical question: If the Assembly members had all maintained their pre-recall positions and the post-recall agenda had remained unchanged, how many fewer Democrats would have voted with the majority of Republicans on each bill? In other words, how many extra votes was Schwarzenegger able to command, not because he was able to affect the voting agenda, but because Democrats in the post-recall period took more moderate positions? Because the NOMINATE model provides estimates not only of the positions of the legislators, but also of the yea and nay locations for each vote, we have the ingredients necessary to address this counterfactual. Evaluating NOMINATE's underlying probabilistic choice model at the yea and nay locations of each of the post-recall roll calls and at the ideal points from both the pre- and post-recall periods, we obtained estimates of the probability that each Democrat would vote on the same side as a majority of the Republicans on each bill, when located first at their pre- and then at their post-recall positions.<sup>28</sup> Given these probabilities, we are able to estimate the average increase in the number of Democrats voting with the majority of Republicans that was due solely to Democratic moderation after the recall. Focusing on 246 post-recall roll calls with majority sizes of less than 60 percent (non-lopsided votes), we estimate that on average 1.3 more Democrats voted with the majority of Republicans after the recall due to policy moderation. The 95 percent confidence interval derived via the parametric bootstrap for this estimate ranges from 1.1

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<sup>28</sup> In addition to the location of the legislators' ideal points and the yea and no positions, calculations of NOMINATE choice probabilities also require values for the beta and weight parameters (Poole and Rosenthal 1987). Estimates of these parameters from NOMINATE were used in the calculation of the choice probabilities. In order to minimize the effects of abstention on particular votes, we calculated the average change vote probabilities by supposing that all Democrats voted on all bills for the purposes of the counterfactual.

to 1.5. Given that the Assembly has only 80 members and that the non-lopsided roll calls have only 40 to 48 members voting in the majority, a shift of between 1 and 2 votes is substantial.

Moreover, we find considerable variation across roll calls. Figure 4 presents a histogram of the point estimates of the moderation-induced shifts in the number of Democrats voting with the majority of Republicans across the 246 non-lopsided votes. For thirty-eight of the votes, three or more additional Democrats are estimated to have voted with the majority of Republicans due to their post-recall policy moderation. A predicted four or more Democrats switched sides on roll calls such as bills to adjust health facilities staffing (AB 1927), a vote on air pollution regulation (AB 2705), and votes on local government finance and property taxes (SB 407 and SB 17). Thus, while Democratic moderation had a minimal effect on about one-half of the non-lopsided roll calls, its effect on many of the remaining votes was considerable.

Figure 4 here

## **Conclusions**

Our findings about the responses of potential candidates and current legislators to California's recall election present two independent pieces of evidence that executive elections can influence legislative politics. The recall provided a rare isolation of an executive election signal, allowing relatively clean tests of our hypotheses. Our first conjecture was that well-qualified Republican candidates would be encouraged to enter legislative races after witnessing their party's 2003 surge, while Democrats would be discouraged. We saw clear signs of this sort of strategic entry calculation among high quality candidates from each party. The contingent patterns in the probability that each party would nominate a candidate with elective experience surprised us, but are not inexplicable. We expected that experienced Republicans in all districts would be more likely to enter races in 2004 than in 2002, and that Democrats everywhere would be

discouraged. Instead, we observed these dynamics only where the Republican recall surge was stronger than average. Potential candidates reacted to the signal sent by the recall, but only where that signal was clearest.

Our second hypothesis was that the October recall, coming at the midway point of the 2003-2004 Session, would alter the voting patterns of legislators. Indeed, we found that Democratic members moderated their behavior in substantively and statistically significant ways in response to the threat signaled by the recall. This rightward shift was strongest among Democrats whose competitive districts made them the most politically vulnerable. Comparing these trends to shifts over the course of the 2001-2002 session demonstrates that they are not mere statistical artifacts.

It was somewhat surprising to find many Republican Assembly members moderating, as well, in the wake of the recall. Our initial impression was that the strong Republican showing in the recall election would embolden Republican incumbents, who would feel less need for election-year moderation; our results showed the opposite. This may be explained by the fact that Schwarzenegger's political beliefs are unusual for California Republican officeholders. He is quite notably pro-choice, openly friendly with many prominent members of California's gay community, and supportive of gun control and environmental regulations.<sup>29</sup> Schwarzenegger's strong showing in the election (again, he received nearly 49% of the vote in a field of 135 candidates) may have at least temporarily empowered the center in California politics, providing incentives for moderate behavior in both parties.

These findings have implications for the interpretation of California's 2003 recall and for the study of links between constituent preferences and legislative behavior. In the

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<sup>29</sup> Indeed, Schwarzenegger is just the sort of candidate that, all else being equal, many of the state's leading Republicans would try to prevent from being nominated. His political beliefs are nearly identical to those of former Los Angeles Mayor Richard Riordan, a popular early choice to oppose Gray Davis in 2002, but a moderate with whom conservative activists were uncomfortable. GOP primary voters ultimately nominated the more conservative, though politically untested, Bill Simon in 2002, who went on to lose to Davis. The lack of a primary in the 2003 recall election made it close to impossible for other Republicans to prevent Schwarzenegger's election.

immediate wake of the recall, many political strategists speculated that Arnold Schwarzenegger's victory and subsequent popularity would aid Republican legislative candidates. The 2004 election results seemed to show that Schwarzenegger had no coattails. There were 23 Assembly seats held by Democrats in which a majority voted for a Republican governor in 2003. In 2004, Republicans failed to capture any of those seats, and the party balance in both legislative chambers remained unchanged (Shelley, 2003a, 2004b). Indeed, none of the ten open seats in which Schwarzenegger endorsed candidates went Republican, and the three Democratic legislators he targeted for termination<sup>30</sup> retained their seats. One interpretation of these findings is simply that the recall was an isolated event in California politics, and that Schwarzenegger's personal popularity has not changed legislative politics or rubbed off on his party.

Our findings point to a different story with the same ending. It appears that the recall did influence the entry decisions of candidates, causing tougher challengers to face incumbent Democrats. These incumbents looked at the results of the recall in their districts, saw the qualifications of their opponents, and perhaps even witnessed a Schwarzenegger visit to their backyard. In response, they moderated their voting patterns to help their electoral chances. The fact that all of the Democrats made vulnerable by the recall survived in 2004 may be a testament to their rational responses to the signal that it sent, rather than evidence of its irrelevance.

Finally, our findings present more evidence on the side of works like Hibbing (1986), Figlio (1995), Jenkins (2000), Tien (2001), Wright and Schaffner (2002), and Snyder and Ting (2003) that legislators alter their voting positions when their incentives and constraints change. Voters voiced their discontent with the status quo in October 2003, and Democrats – especially those in marginal seats – shifted their behavior in the year that followed. They made sure that they would not suffer the same fate that many of

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<sup>30</sup> State Senator Michael Machado and Assembly members Barbara Matthews and Nicole Parra all kept their jobs, despite the governor's energetic endorsement of their opponents.

their colleagues in Congress who had strayed too far from their districts' preferences suffered (Canes-Wrone, Brady, and Cogan, 2002). Rather than dying in their ideological boots, they changed shoes in order to live to fight another day.

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## Appendix:

### A Simple Model of Incumbent Positioning When Facing Reelection

In this appendix, we describe a simple model of incumbent positioning in advance of an election. We then characterize conditions under which an incumbent in this model will be responsive to a shift in her perceived location of her district's median voter. By "responsive" we mean that the incumbent will move left or right, in response to a left or right (respectively) shift in her district's median. We further establish conditions under which the degree of responsiveness will be a decreasing function of the *ex ante* electoral security of the incumbent (that is, her *ex ante* equilibrium probability of reelection). Finally, we consider conditions under which these predictions would not hold demonstrating that these intuitive predictions are less general than one might otherwise imagine.

We begin by considering a set of incumbent legislators  $i = 1, \dots, N$  seeking reelection in single-member districts. Each incumbent chooses a position,  $\theta_i$ , in a single-dimension issue space. After the incumbents' positions are announced, a primary and then a general election are held in each district. Each incumbent wins reelection if (and only if) she wins both her primary and general elections. Because the incumbents must take positions (reflected in their roll call voting records and other public statements) prior to learning who (if anyone) will challenge them in the primary and general elections and before any partisan or incumbency electoral "shock" is revealed, incumbents cannot know with certainty if their positions will lead to electoral success or failure. We assume that an incumbent's (subjective) probability of winning the primary election is a decreasing function of the distance between the position taken by an incumbent,  $\theta_i$ , and that incumbent's perception of the location of the median of her party's primary election electorate,  $\rho$ ,

$$P(|\theta_i - \rho|).$$

Similarly, we assume that the probability of winning the general election (conditional on reaching it) is a decreasing function of the distance between incumbent's position and her perceived district median,  $m_i$ ,

$$G(|\theta_i - m_i|).$$

The position of this general election median voter varies by district, with the "safest" districts for one party's candidates being the ones in which the district median is closest to the position of the median voter in that party's primary (because that party's voters make up a large portion of the general electorate). Assuming candidates are ultimately interested in holding office, each incumbent's objective is to maximize her probability of reelection,

$$V = P \cdot G.$$

Letting  $g = \ln G$  and  $p = \ln P$ , and noting that the value of  $\theta$  that maximizes  $V$  also maximizes  $\ln V$ , we can rewrite the incumbent's problem as maximizing

$$g + p$$

over  $\theta$ .

We make the following assumptions about  $p$  and  $g$ :

- A1.  $p$  and  $g$  are three times continuously differentiable.
- A2.  $g' = dg(z)/dz < 0$  and  $p' = dp(z)/dz < 0$  for all  $z \in (0, \infty)$

- A3.  $g'(0) = 0$  and  $p'(0) = 0$ .  
A4.  $g'' < 0$  and  $p'' < 0$  for all  $z \in [0, \infty)$   
A5.  $g''' < 0$  and  $p''' > 0$  for all  $z \in [0, \infty)$

The first assumption allows us to undertake the usual marginal analysis. The second assumption says that that probability of winning the primary and the general election is strictly monotonically decreasing in the distance between the incumbent's position and the perceived median of her primary and general election constituencies respectively for all distances greater than zero. The third assumption insures that  $g$  and  $p$  are continuous in  $\theta_i$  which is technically convenient. The fourth assumption (when combined with the second) requires that the log probability of winning the primary or general election must be falling at an increasing rate as the incumbent moves away from the median voter. As can be seen below, the assertion that the incumbent will move toward the district median when the district median moves away from the incumbent follows from this assumption. The fifth assumption requires that  $g$  is increasingly concave and  $p$  is decreasingly concave. This less intuitive restriction (along with (A1)-(A4)) is sufficient to establish that safer incumbents will shift less response to shifts in their general election medians than do less safe incumbents. Note that the first derivatives of  $g$  and  $p$  are  $\frac{G'}{G}$  and  $\frac{P'}{P}$  respectively. These expressions can be interpreted as the proportional reductions in the probabilities of winning each election as distance increases. (A4) requires that these proportional reductions increase (in absolute value) as distance is increased. (A5) requires that this rate of reduction be increasing in distance for the general election and decreasing in distance for the primary election. In that sense, (A5) requires that the primary electorate is somewhat more "forgiving" of marginal moves by the incumbent the farther away the incumbent is from their median than is the general electorate.

Note that, as is typical of spatial models, the direction and scale of the issue space is arbitrary. To simplify notation and without loss of generality, we will establish the location and direction of the scale by assuming that  $\rho = 0$  and  $0 < m_i$ .

We begin our analysis of the model with a lemma which establishes the optimal location taken by the incumbent will, unsurprisingly, fall between her primary and general election medians.

**Lemma 1:** The position selected by the incumbent,  $\theta_i^*$ , will lie between 0 and  $m_i$ .

*Proof:*  $G$  and  $P$  are both decreasing functions of distance. If  $\theta_i \leq 0 < m_i$ ,  $P$  is non-decreasing in  $\theta_i$  and  $G$  is strictly increasing in  $\theta_i$ . Similarly, if  $\theta_i \geq m_i > 0$ ,  $G$  is non-decreasing and  $P$  is strictly increasing in  $-\theta_i$ , thus  $\theta_i^*$  cannot fall outside the interval  $(0, m_i)$ .

Given this lemma, we can establish the following proposition.

**Proposition:** Given the incumbent's problem and assumptions described above, if the median,  $m_i$ , moves away from the incumbent's optimal position: (1) the incumbent's position will move in that same direction, (2) the size of the incumbent's change in

position in response to a change  $m_i$  is decreasing in the “electoral safety” of the incumbent,  $V(m_i, \theta_i^*)$ .

*Proof of the first part of the proposition:* The first-order condition for the incumbent’s problem is

$$g'(m_i - \theta_i^*) - p'(\theta_i^*) = 0.$$

writing  $\theta_i^*$  as a function of  $m$ ,

$$g'(m_i - \theta^*(m_i)) - p'(\theta^*(m_i)) = 0.$$

Differentiating by  $m_i$ ,

$$g''(m_i - \theta^*(m_i)) \left[ 1 - \frac{\partial \theta^*}{\partial m_i} \right] - p'(\theta^*(m_i)) \frac{\partial \theta_i^*}{\partial m_i} = 0.$$

rearranging, have

$$\frac{\partial \theta_i^*}{\partial m_i} = \frac{g''(m_i - \theta^*(m_i))}{g''(m_i - \theta^*(m_i)) + p''(\theta^*(m_i))} > 0 \quad (1)$$

establishing the first part of the proposition.

In order to establish the second part of the proposition, it is useful to note that electoral safeness (the equilibrium probability of reelection) can be parameterized by the location of the general election median voter. We establish is result in the following lemma.

**Lemma 2:** The electoral safeness of a district  $i$  is a strictly decreasing function of  $m_i$ .

*Proof:* Given that  $0 < \theta_i^* < m_i$ , the incumbent’s objective can be written as

$$g(m - \theta^*(m_i)) + p(\theta^*(m_i))$$

differentiating by  $m_i$ , we have

$$g'(m_i - \theta^*(m_i)) \left[ 1 - \frac{\partial \theta^*}{\partial m_i} \right] + p'(\theta^*(m_i)) \frac{\partial \theta^*}{\partial m_i} < 0.$$

That this expression is negative follows because  $g'$  and  $p'$  are negative by assumption,  $\frac{\partial \theta^*}{\partial m_i} > 0$  by the proof given above, and  $\frac{\partial \theta^*}{\partial m_i} < 1$  by inspection of (1) establishing that electoral safety is decreasing in  $m_i$ .

Given this lemma, we can provide the proof of the second part of the proposition.

*Proof of the second part of the proposition:* Differentiating (1) again by  $m$  and rearranging, we find

$$\frac{\partial^2 \theta^*}{\partial m^2} = \frac{g'''(1 - \frac{\partial \theta^*}{\partial m}) [p''(\frac{\partial \theta^*}{\partial m})]^2 - p'''(\frac{\partial \theta^*}{\partial m}) [g''(1 - \frac{\partial \theta^*}{\partial m})]^2}{[g''(1 - \frac{\partial \theta^*}{\partial m}) + p''(\frac{\partial \theta^*}{\partial m})]^3} > 0.$$

The this expression is positive because by second derivatives are assumed negative, thus the denominator is negative while the third derivative of  $g$  is assumed negative and third derivative of  $p$  is assumed positive insuring that numerator is also negative. Therefore, the size of the response to a change in  $m_i$ ,  $\frac{\partial \theta^*}{\partial m}$ , is an increasing function of  $m_i$ , which is a

decreasing function of electoral safety. Thus, the size of the response is decreasing in electoral safety establishing the second part of the proposition.

### Discussion and counter-examples

Assumption A1-A5 describe sufficient conditions for the assertions made in the proposition. It is also informative to consider what conditions would upset the assertions made in the proposition.

From inspection of (1), we see that it is sufficient for the first part of proposition that for  $g''$  and  $p''$  have the same sign, though that sign could be positive, as well negative. Indeed, as long as  $g''$  is larger than  $p''$  in absolute value (at the optimal  $\theta_i$ ), the first part of the proposition will hold even if  $g''$  and  $p''$  have opposite signs. However, if  $g''$  and  $p''$  have opposite signs and  $g''$  is not larger than  $p''$  in absolute value, then a shift to the right by the median voter would result in the shift to the left by the incumbent. Intuitively, what is happening in this case is that the incumbent compensates for drop in her probability of winning the general election due to the rightward-shift of the general election median, by shifting left and increasing the probability of winning the primary election. While this leftward shift further reduces the probability of winning the general election, that further loss is more than offset by the increase in the probability of winning the primary election. It easy to find  $G$  or  $P$  which imply a  $g$  or  $p$  which have positive second derivatives. For example,  $G$  of the form  $\exp(-z^{1/2})/c$  where  $c > e$  implies a  $g$  with a positive second derivative.

The second part of the proposition relies on the signs of the third derivate of  $g$  and  $p$  (as well as the assumption that the second derivatives are negative). Counter examples to the proposition when this condition does not hold are easily constructed. For example, suppose  $G$  and  $P$  are of the form  $\exp(-z^2)/c$  where  $c$  is some positive constant greater than  $e$ . In this case,  $g''$  and  $p''$  are both negative and constant (-2) and  $\frac{\partial \theta^*}{\partial m_i} = 1/2$  is not a function of the “safeness” of the district. On the other hand, (A5) is not necessary for the result. For example, if  $G = \exp(-z^4)/c$  and  $P = \exp(-z^3)/c$ , (A5) does not hold and yet  $\frac{\partial \theta^*}{\partial m_i}$  can be shown to increase in  $m$ .

Thus, while we can demonstrate conditions under which our intuitive predictions about the response of incumbents to changes their district medians can be established formally, it is interesting to note that those conditions are not as general as one might imagine.

**Table 1. Explaining the Quality Level of Major Party Nominees, 2002 and 2004.**

<i>When this variable</i>	<i>Shifts from ... to ...</i>	<i>Change in the Probability that Republican is a High Quality Candidate (upper and lower bounds)</i>	<i>Change in the Probability that Democrat is a High Quality Candidate (upper and lower bounds)</i>
Year of Election (for districts with a 22.8% recall surge)	2002 to 2004	<b>15% increase</b> (-5%, 34%)	<b>26% decrease</b> (-44%, -4%)
Year of Election (for districts with a 14.4% recall surge)	2002 to 2004	<b>16% decrease</b> (-35%, 5%)	<b>19 increase</b> (-15%, 49%)
Democratic Registration	42.5% to 71.7%	21% decrease (-51%, 8%)	<b>43% increase</b> (8%, 73%)
Conservative Incumbent from the Other Party	Absent to Present	21% decrease (-40%, 3%)	<b>28% decrease</b> (-46%, -8%)
Liberal Incumbent from the Other Party	Absent to Present	17% decrease (-36%, 4%)	<b>11% decrease</b> (-16%, 40%)
Average Household Income	\$45,804 to \$80,690	20% decrease (-43%, 2%)	27% increase (2%, 55%)
Black Population	0% to 13.7%	12% decrease (-38%, 13%)	4% increase (-27%, 34%)
Latino Population	13.1% to 51.7%	<b>26% decrease</b> (-49%, -4%)	2% increase (-27%, 30%)
Asian-Pacific Islander Population	2.5% to 19.9%	1% increase (-17%, 18%)	3% decrease (-31%, 27%)

*Notes: Boldface indicates that the first difference was generated by a coefficient or by coefficients that were statistically significant at the 95% confidence level in a one-tailed test. Upper and lower bounds show the 95% confidence level around a predicted first difference, which in the case “Year of Election” rows is generated by two countervailing coefficients. Based on an ordered probit model estimated in Stata 8.0, with first differences drawn from 1000 simulations performed by CLARIFY (King, Tomz, and Wittenberg, 2000). 119 observations for Republican nominees, 95 observations for Democratic nominees. Pseudo R-squared equals 0.18 for the Republican model, 0.22 for the Democratic model.*

**Table 2. Ordered Probit Coefficients from Candidate Quality Model**

<i>Variable</i>	<i>Republican Candidate Quality</i>	<i>Democratic Candidate Quality</i>
Year 2004 Indicator	<b>-2.18</b> (1.08)	<b>2.96</b> (1.55)
Year 2004 Indicator * Strength of the Republican Surge	<b>0.11</b> (0.05)	<b>-0.017</b> (0.08)
Democratic Registration	-2.03 (1.44)	<b>4.12</b> (1.70)
Presence of Incumbent from the Other Party	-1.05 (0.96)	0.67 (0.47)
Presence of Incumbent from the Other Party * Ideal Point of Incumbent in First Year of Session	-0.51 (1.23)	<b>-1.80</b> (0.62)
Average Household Income	-0.016 (0.0096)	<b>0.022</b> (0.012)
Black Population	-0.024 (0.024)	0.006 (0.03)
Latino Population	<b>-0.019</b> (0.009)	0.00099 (0.01)
Asian-Pacific Islander Population	0.0017 (0.015)	-0.034 (0.023)

*Notes: Boldface indicates significance at the 95% confidence level in a one-tailed test. Table entries are ordered probit coefficients, with standard errors in parentheses. In the Republican candidate quality model, N=119, the estimate of cutpoint #1 is -3.24 (0.95 standard error), and the estimate of cutpoint#2 is -2.69 (0.93). In the Democratic candidate quality model, N=95, the estimate of cutpoint #1 is 3.19 (1.14), and the estimate of cutpoint#2 is 3.85 (1.16).*

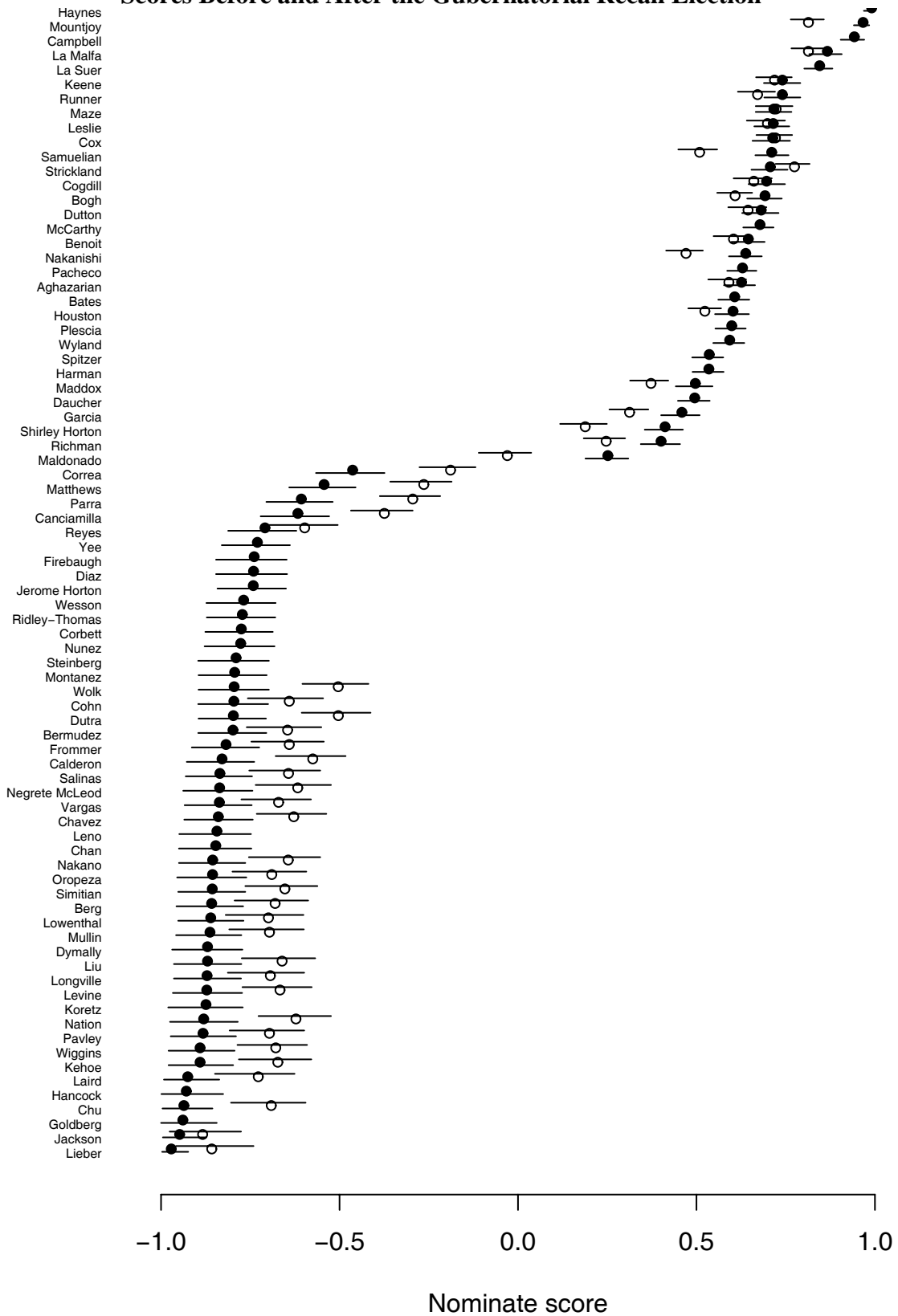


**Table 3: Average Shift in First Dimension NOMINATE Scores by Party, 1997--2004**

	<i>Democrats</i>	<i>Republicans</i>
1997-98	-0.04 (-0.05,-0.03)	-0.14 (-0.15,-0.11)
1999-00	-0.11 (-0.13,-0.09)	-0.03 (-0.05,-0.02)
2001-02	-0.03 (-0.06,-0.02)	0.09 (0.08,0.11)
2003-04	0.20 (0.18,0.22)	-0.08 (-0.10,-0.07)

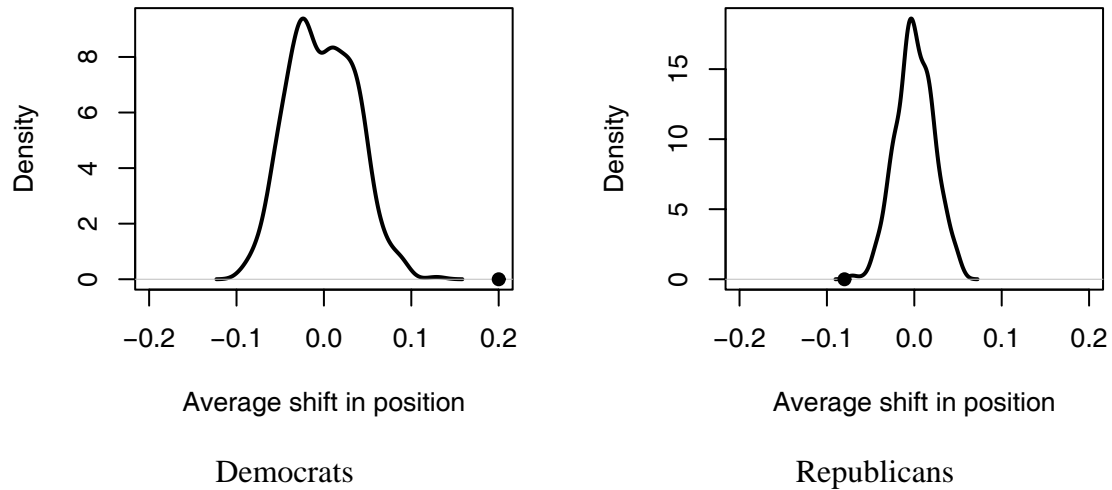
*Table shows the average difference between the NOMINATE scores of California Assembly members based on votes taken before October 7<sup>th</sup> and votes taken after October 7<sup>th</sup> of the odd-numbered year of each two-year legislative session. Note that shifts observed for Democrats during the 2003-04 session (the period covering the 2003 recall) are twice as large than those of any other period and that 2003-04 is the only period in which Democrats became more conservative over the course of the session. Ninety-five percent confidence intervals for each estimated shift are shown in parentheses.*

**Figure 1. 2003-2004 California Assembly Members' First Dimension NOMINATE Scores Before and After the Gubernatorial Recall Election**



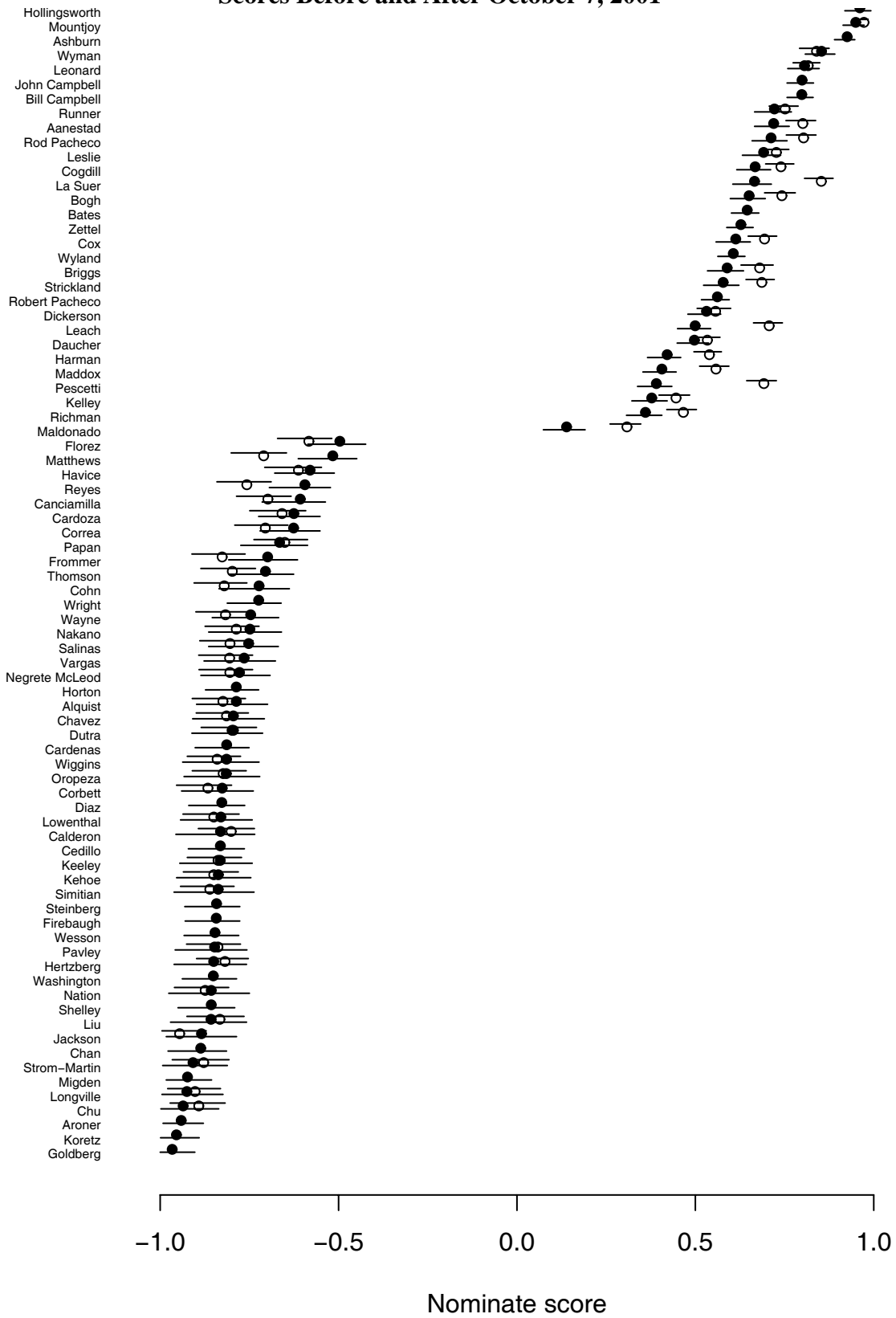
*The figure shows point estimates and confidence intervals for the first dimension NOMINATE scores of each of the 80 members of the California Assembly during the 2003-2004 session. The solid dots represent pre-recall positions. The open dots represent post-recall positions. The locations of members from the 27 safest districts are fixed across the two periods in order to identify the changes in the locations of the others (as described in the text). The fixed members are represented by a single solid dot.*

**Figure 2. Distribution of the Average Change in Assembly Members' First-dimension NOMINATE Scores by Party Across 500 Random Divisions of the Roll Calls Cast During 2003-2004**



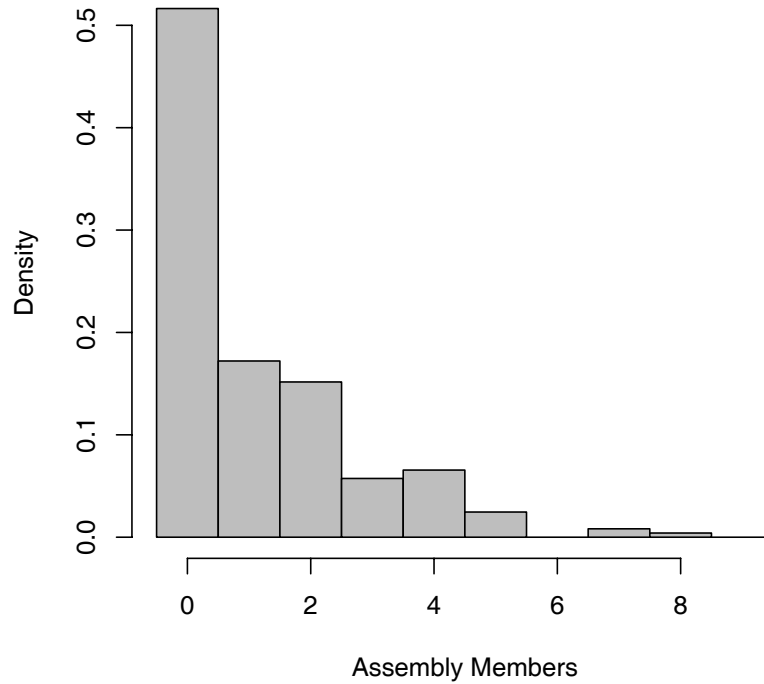
*Each panel is a kernel density plot of the distribution of the average change in the first dimension NOMINATE location of the given party's members across randomly generated divisions of the roll calls cast during 2003-2004. In each of the 500 divisions, 903 votes (equal to the number of contested roll calls cast before the recall) were allocated to the first subset and 998 votes (equal to the number of contested roll calls cast after the recall) were allocated to the second subset. The solid dot on each plot shows the average change in the location found when the roll calls are divided into pre- and post-recall periods. For the Democrats, the pre-/post- recall split generated a larger shift than was found in any of the 500 random divisions.*

**Figure 3. 2001-2002 California Assembly Members' First Dimension NOMINATE Scores Before and After October 7, 2001**



*The figure shows point estimates and confidence intervals for the first dimension NOMINATE scores of each of the 80 members of the California Assembly during the 2001-2002 session. The solid dots represent pre-October 7, 2001 positions. The open dots represent post-October 7, 2001 positions. The locations of members from the 23 safest districts are fixed across the two periods in order to identify the changes in the locations of the others (as described in the text). The fixed members are represented by a single solid dot.*

**Figure 4. Distribution of the Estimated Increase in the Number of Democrats Voting with a Majority of Republicans Across Non-Lopsided Post-Recall Roll Calls Due to Democratic Moderation**



*Histogram of the estimated increase in the number of Democrats voting with the majority of Assembly Republicans across the 246 post-recall roll calls having majority sizes of less than 60 percent due solely to moderation in Democrats' positions following the recall. While roughly one-half of these roll calls reveal no preference-shift-induced increase in the number of Democrats voting with the majority of Republicans, in some 10 percent of cases, we estimate that four or more extra Democratic votes were moved to the Republican side due to the rightward shifts in Democrats' positions following the recall.*