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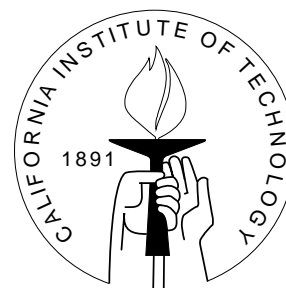
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ANALYSIS OF CROSSOVER AND STRATEGIC VOTING

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Analysis of Crossover and Strategic Voting

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Abstract

We undertake the analysis of primary elections from 1980 through 1996 using both academic individual level survey data, media exit-polls, and aggregate election returns on a county by county basis. We come to the following conclusions:

1. **there is very little crossover voting in general in United States primaries;**

2. **the difference in the amount of crossover voting between states with open primaries and closed primaries is not substantively large;**

3. **the amount of strategic behavior on the part of voters is extremely small.**

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1   Introduction

1.1   Strategic voting

In general, whether voters in democratic systems are "rational" has long been under debate in the academic literature. One of the central points of contention has been whether the Riker and Ordeshook (1968) "calculus of voting" is sound empirically (e.g. Green and Shapiro 1994; Aldrich 1993; Jackman 1993). There, the voter is assumed to calculate the costs and benefits of voting and to vote for the candidate bringing them the highest benefits with the least cost.

But, when the theoretical "calculus of voting" model was extended to multiparty or multicandidate elections by McKelvey and Ordeshook (1972), the theoretical rationale for another form of rational behavior became quite clear. For the McKelvey and Ordeshook model demonstrated that in a multiparty or multicandidate election, a voter might be willing to vote for her second most preferred party if the more preferred party is unlikely to win and if there is a close contest between the second and third ranked parties. This rational behavior goes by many labels, called strategic, tactical, or sophisticated voting behavior (we will refer to this behavior as strategic voting in this discussion).

Obviously, this sort of strategic behavior by voters was not noticed first by McKelvey and Ordeshook. But because of the obsession of much of the political behavior literature on modeling two–party or two–candidate elections in the United States, strategic behavior was largely ignored by most researchers until the late 1970's and early 1980's. Two political developments fueled the rising interest in strategic voting research. One was the rise of multi–candidate presidential primary contests in the United States following the post–1968 reforms in the nomination processes in both of the major political parties. In some of these primary struggles, there were at least a half of a dozen candidates in each party primary; the fact that there were multiple viable candidates opened the door for strategic behavior by primary voters (Abramson et al. 1992; Bartels 1985).

The second development was the rise of third–party or third–candidate challengers in the United States and in the United Kingdom (Cain 1978; Galbriath and Rae 1989; Heath et al. 1991; Johnston and Pattie 1991; Niemi et al. 1992). In the United Kingdom, though, the sustained revival of the Liberal Party since 1970, the rise of nationalist parties in Wales and Scotland, and the new Social Democratic Party, pointed significant challenges to the established two–party system. However, the rising importance of these new or resurgent parties in British politics actually seemed to work to the advantage of the Conservatives in the early 1980's. This led to explicit attempts by political leaders, by the popular press, and by political pundits to persuade voters to cast strategic votes in order to defeat the Conservative party in the 1987 general election (Galbraith and Rae 1989).

Since these developments, a number of researchers have attempted to estimate the amount of strategic voting in a number of different countries and types of elections. All of the estimates which we have found in the academic literature are summarized in Table 1. There we show that the estimated amount of strategic voting varies from 3.6% (1983 UK) to 17.0% (1987 UK). What accounts for the amount of variation in these estimates of strategic voting?

Table 1: Published estimates of strategic voting

Study	Election	Estimate of strategic voting
Johnston and Pattie (1991)	1983 UK	3.6%
Johnston and Pattie (1991)	1987 UK	5.8&
Blais and Nadeau (1996)	1988 Canada	6.0%
Evans and Heath (1993)	1987 UK	6.3%
Heath et al. (1991)	1987 UK	6.5%
Alvarez and Nagler (1997)	1987 UK	7.2%
Heath and Evans (1994)	1992 UK	9.0%
Galbraith and Rae (1989)	1987 UK	10-12%
Abramson et al. (1992)	1988 US S.T. Dem.	13%
Abramson et al. (1992)	1988 US S.T. Rep.	12.7-13.9%
Cain (1978)	1970 UK	14.6%
Niemi et al. (1993)	1987 UK	17.0%

Many of the estimates in this table suffer from one of two important methodological flaws. The first is the reliance by many of these studies on aggregate election returns to estimate the extent of strategic voting. Some researchers use aggregate electoral data to attempt a direct constituency–by–constituency estimate of strategic voting (Cain 1978), while others look at shifts in vote shares between pairs of elections in different types of constituencies (Spafford 1972; Curtice and Steed 1988; Galbraith and Rae 1989; Johnston and Pattie 1991). Others have simply examined the support for minority parties in different political systems (plurality versus proportional representation systems) to infer the presence of strategic voting.

These studies all suffer from an obvious and problematic flaw. They all are using ag-

gregated electoral data to infer individual–level preferences and expectations about the probabilities of various parties winning elections. In broader terms, these researchers are testing individual–level political theories with macro–level electoral data — producing exactly the "ecological inference" problem which has received much attention in the writing of prominent political methodologists in recent years (e.g. Achen and Shively 1995; King 1997). It is commonly known that estimates about individual behavior produced using aggregated data are often incorrect (King 1997). Thus, we must be very suspicious of estimates of an individual–level behavior like strategic voting produced using aggregate electoral data.

The other flaw suffered by many of these studies is that they use reports of survey respondents about the motivations for their voting behavior well after the election (Heath et al. 1991; Niemi et al. 1992; Evans and Heath 1993). For example, in the 1987 British general election survey, respondents were asked to state the main reason they voted for the party they chose — one of the three response options was "I really preferred another Party but it had no chance of winning in this constituency."

These questions, in particular those in the 1987 British survey data, have been used quite widely in the literature on strategic voting. In fact, Niemi et al. (1992) use this survey question, and a subsequent open–ended question asking for the reasons a respondent cast the ballot they reported, to develop three different measures of strategic voting. Unfortunately researchers using these survey questions do not appear to have seriously considered the quality of the survey responses obtained for questions asking for justifications of reported political behavior. In fact, there has been a serious debate in the American electoral behavior literature recently about the quality of post–election questions probing the respondent's vote (Wright 1990, 1992); this work has found that there is a strong bias towards reporting a vote for winning candidates the further the interview is from the election. In our work, we have shown that there is a postelection bias *in favor of finding increased levels of strategic voting* the further the interview is conducted from election day (Alvarez and Nagler 1997). This effect is particularly strong in the open–ended method of measurement, since we see clear increases in each successive postelection month in the reported percentage of strategic voting. For respondents interviewed six months after the election were over twice as likely as respondents interviewed one month after the election to report strategic voting. For many of these self–reports are not really strategic voting, but misreporting of vote biased towards the winner—which is observationally equivalent to reporting a strategic vote.

In the end, we believe that our approach for measuring strategic voting is more accurate than that previously advanced in the literature. First, we begin with a more consistent model of sincere voting in multiparty democratic systems than has been presented in the literature to date. Second, we use a new operationalization of the objective strategic setting. We take advantage of the electoral structure of British elections that allows for cross–constituency variance in the likelihood of strategic voting. In this section of the paper we discuss both these advances, and then conclude by discussing the specific expectations we have of our model's predictions. We use a well–specified model of voter

decisionmaking and we incorporate objective estimates (based on the past performance of each party in a particular electoral district) of the probabilities of party success in the electoral district. Using this methodology, we obtain an estimate of 7.2% strategic voting in the 1987 British election, which is in the middle of the range of estimates in Table 1.

1.2 Crossover Voting in United States Primaries

This is a brief review of a brief literature. There is disagreement in the literature over the definition of crossover voting. This disagreement centers on independent voters. As much of the early literature was generated by a Democratic party platform rule that explicitly grouped independent voters with Republicans, the early literature reflected that categorization in defining a crossover voter. We use the term "crossover voting" to refer to when identifiers of the opposing party vote in the primary (i.e., Republicans vote in the Democratic primary or Democrats vote in the Republican primary).

Hedlund and Watts (1986) examined voting in Wisconsin primaries from 1968 to 1994. The percentage of crossover voting they find ranges from 2% to 14% in the Republican primary, and 7% to 12% in the Democratic primary. The rate of independents crossing over into either primary is quite large: from 28% to 44% of voters in the Republican primary were Independents, from 30% to 45% of voters in the Democratic primary were Independents.

Adamany (1976) performed a similar analysis for 1964 through 1972 in Wisconsin. However, he reports different crossover rates using a different sample. According to Adamany's data, the crossover rate as we have defined it (excluding Independents) ranged from 3.7% to 14.1% in the Republican primary; and from 16.2% to 22.4% in the Democratic primary. The crossover rate of independents ranged from 9.7% in the Democratic primary; and from 7.0% to 10.2% in the Republican primary.[1]

Wekkin reanalyzed the data on Wisconsin for 1980, but considered whether Independents reported to be "leaning" towards either the Democratic party or Republican party. By considering the voting of the leaners, we can develop alternative views on how to classify Independents. Wekkin found that if Republican leaners were categorized as Republicans, and Democratic leaners were categorized as Democrats; then the crossover rates would be 10.2% for the Democratic primary, and 22.4% for the Republican primary.

Additionally, some work on voting in United States primaries tries to analyze the tendency of voters to exhibit the basic tenets of strategic behavior; that is, to cast a vote for other than their first-choice in the hopes of having the greatest chance of favorably influencing the final election outcome towards the best possible outcome based on their preferences. This behavior could be manifested two ways in Primaries. First, a voter could pass over their first choice in a primary if they feel their first choice has no chance

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[1]We believe the discrepancy between Adamany's figures and Hedlund and Watts figures arises because Adamany classifies Independent-leaners as partisans.

to win the primary; and attempt to vote for their second or third choice in the primary rather than "waste" their vote. Second, a voter could realize that regardless of their first choice's chances in the primary, their first choice would have no chance in the general election; and they could vote for a candidate who is not their first choice, but has a better chance of winning the general election. This sort of voting has been described as "positive strategic" (Southwell 1981).

Abramowitz, McGlennon and Rapoport (1981) examined voter behavior in the 1977 Virginia gubernatorial primary. There were two candidates, and the authors were trying to determine if voters considered which candidate would have a better chance in the general election when casting their vote in the primary. They found that fewer than 10% were considering this.

A more recent attempt at exploring sophisticated voting in United States primaries was undertaken by Abramson, Aldrich, Paolino, and Rohde (1992). They examined the voting behavior and possible motivation of voters in the 1988 Super Tuesday primaries. They found that only one in seven voters could be classified as "apparently sophisticated." In other words, the test of sophistication was weak - and this was the upper bound for the number of voters who might have been behaving strategically.

Southwell (1981) examined the 1988 Super Tuesday primary to determine the amount of "positive strategic" behavior, as well as the amount of raiding. She estimated that as many as 18% of voters were positive strategic, and as many as 6% were raiders. She found equal amounts of positive strategic voting in closed and open primaries.

Most disagreement in the literature on the amount of crossover voting is based simply on disagreement over the definition of crossover voting. The literature seems to agree that when speaking of strictly partisan crossover voting (as opposed to counting Independents as crossovers), there is on the order of 10% crossover voting in primaries.

2   Basis of this Analysis

This analysis is based on publicly available survey data, and aggregate election returns from several states.

The individual level analysis is based on the following surveys that are available from the Inter-university Consortium for Political and Social Research in Ann Arbor.

- 1992 Voter Research and Surveys Presidential Primary Exit Polls

- 1988 CBS/New York Times Super Tuesday Primary Election Exit Polls

- 1988 CBS/New York Times Primary Election Exit Polls

- 1988 American National Election Studies Super Tuesday Study

- 1984 CBS/New York Times Primary Election Exit Polls

- 1980 American National Election Study

We analyze this data to determine the likelihood of voters to engage in: crossover voting, strategic voting of a positive kind, and raiding.

First, we consider the amount of crossover voting likely to happen under an open primary. This is of course the first question; if there is no crossing-over, then the adoption of an open primary has no impact.

We also examine whether there is more or less crossover voting in an open primary than a closed primary. Crossover voting in a closed primary may sound like a logical inconsistency: but many voters in closed Democratic primaries will profess to identify with the Republican party when asked, and will vote for the Republican presidential candidate in the general election. The same is true for many voters in closed Republican primaries.

Second, we consider why these voters are crossing over. There are three reasons to crossover:

- Sincere Voting: A Republican voter could feel that a Democratic candidate is the best candidate available in the entire field, and thus crossover to vote Democratic. Such a voter is sincerely trying to insure that his or her most preferred candidate has the opportunity to contest the general election.

- Second-Best Vote: A Republican voter could feel that the Republican primary is a foregone conclusion; and rather than waste their vote on a Republican candidate, they could try to insure that the Democratic candidate is the best available candidate from the lot. This would give the voter some 'insurance' in the event of a Democratic win in the general election.

- Raiding: A Republican voter could feel that the most important thing is to elect *any* Republican; and think that the best way to do this is to insure that the Democrats nominate the candidate that would be weakest in the general election. Such a voter would vote in the Democratic primary for the Democratic candidate perceived to be weakest in the general election. Such behavior presupposes a complex chain of behavioral assumptions, and an unlikely set of election day realities. First, the voter must choose to try to influence the election by electing the most likely *loser* for the 'opposing' side; rather than try to elect the most likely *winner* from the home-team. Second, the voter must have information (or beliefs) about the relative chances of success of each candidate in the primary in a general election that is at least 4 or 5 months away.

3 Complexity of Strategic Voting

Before proceeding to the empirical analysis of the incidence of strategic voting, we lay out the reasons why it is unlikely to observe strategic voting in the context of United States primary elections.

3.1 Second-Best Strategic Voting

This requires information about the likely outcome in at least one primary. Such information might be available. For instance, in United States presidential elections, a sitting incumbent president is generally regarded as almost a sure thing in his own party's primary. Thus for instance, a Democratic voter in 1996 might have felt that Bill Clinton was certain to be the party's nominee. But uncertain of the general election outcome between Clinton and the Republican nominee, the voter might have voted in the Republican primary for Steve Forbes because the voter preferred Forbes to all other Republican candidates.

3.2 Strategic Raiding

Such behavior presupposes a complex chain of behavioral assumptions, and an unlikely set of election day realities. First, the voter must choose to try to influence the election by electing the most likely *loser* for the 'opposing' side; rather than try to elect the most likely *winner* from the home-team. Second, the voter must have information (or beliefs) about the relative chances of success of each candidate running in the primary in a general election that is at least 4 or 5 months away. Such information is simply not going to be available. Consider recent electoral history. In 1992 even *after* sewing up the Democratic nomination, Bill Clinton was given little chances in the polls of winning the general election. During the primary it became common wisdom that Clinton had so much personal baggage that he would be a sure loser in a general election. So any Republican voter attempting to strategically 'raid' the Democratic primary might have been tempted to vote for Bill Clinton. But obviously this would not have secured the objective.

One reliable piece of evidence we have that voters *cannot* know in advance the likelihood of a given candidate winning the general election is the documented change in perceptions over time, and polls over the course of a campaign, of a given candidate's chances. The Iowa Presidential Election Market offers us a reliable indicator of the informed public's perceptions of the chances of any candidate winning nomination and the general election.[2] That the prices for any candidate move over time is an indication that

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[2]The Iowa Presidential Election Market is a real money futures market run by the College of Business Administration of the University of Iowa. The market is open to traders from anywhere in the world, access is provided over the world wide web. Participants in the market buy financial contracts, the value of which are determined by the presidential election outcome.

the public does not know who the most likely winner is. For instance, between January and March of 1996 the price of a Bob Dole share for the Republican Primary fluctuated between 63 cents and 50 cents. There is even more uncertainty in the public's mind as to the winner of the presidential election. The general public has no reason not to take the latest published pole as the best predictor of the general election result. Yet the polls show tremendous variability.

3.3   Elections Considered

The likelihood of crossover voting depends upon the available candidates. In the extreme case, few voters are likely to crossover to vote in a primary with only one candidate. Rather we expect crossover voting to depend upon two things: the choices available for each party, and the relative competitiveness of each party's primary. Thus to establish the likelihood of crossover voting it is important to consider crossover voting under many different election scenarios.

We analyze the following cases:

- The 1992 presidential primary: Here the republican race was not considered competitive, with George Bush running as an incumbent and only challenged by Pat Buchanan; the Democratic race was extremely competitive for many states and offered many choices.

- The 1988 presidential primary: here the Republican race was briefly competitive and the Democratic race was competitive.

- The 1984 presidential race: this offered a competitive Democratic primary, and a completely uncompetitive Republican primary. This was an excellent opportunity for Republican voters to crossover.

- The 1980 presidential primary: this race offered interesting primaries in both parties; giving voters of both parties the temptation to crossover.

4   Cross Over Voting

4.1   Definition: Open vs. Closed Primaries

Most primaries in the United States are commonly classified in one of two categories: open or closed.

In most states where voters declare their party preference when they register to vote, 'closed' primaries are held; only voters registered with a particular party are allowed to participate in that party's primary. Some states have

modified this system and allow citizens who register as independent or state no party preference when they register to select the party ballot of their choice. Selecting a party ballot usually puts these voters on the registration rolls as members of the party. In states without party registration, 'open' primaries are held. Voters either choose a party ballot before they enter the polling booth or in states where the Republican and Democratic primary races are on the same ballot, voters may cast a ballot in either party primary once in the polling booth.(McGillivray, 1993: vii)

We used McGillivray's classification of states in determining whether they had open or closed primaries. Thus a closed primary is one in which only voters registered as party members are eligible to cast ballots. An open primary is one in which voters are **not** required to be registered as party members to cast ballots.

4.2 Definition: Crossover Voting

We consider a crossover voter to be when a Democratic voter votes in a Republican primary, or when a Republican voter votes in a Democratic primary. We do **not** consider votes in either primary by independent voters to be crossover votes. We feel that any definition of crossover voting that counts independents is not appropriate for American politics, where an increasing number of voters now claim to be independents. The American National Election Studies has been asking respondents "Generally speaking, do you consider yourself a Republican, a Democrat, an Independent, or what?" since 1952. In the 1990s the percentage of respondents claiming to be Independent has been over 35%.

4.3 Measurement of Crossover Voting

To determine the difference in the amount of crossover voting between open and closed primaries we must first find a way to measure the amount of crossover voting in closed primaries. This might seem like a contradiction: by definition the members of the Democratic party are not able to vote in a closed Republican primary, and members of the Republican party are not able to vote in a closed Democratic party. However, party "membership" is not really a useful concept in this case. Since people become party "members" by the act of registering to vote, not by some voluntary act independent of voting, party membership is not really what we want to know. In a closed party we could observe that there are no "crossover" voters simply because the criteria we use to assign someone to a party is observationally equivalent to their already having crossed over. For instance, consider a state with closed primaries; and an electorate that has not previously registered with either party, but is 50% Republican and 50% Democratic. If in a given election 1 out of 5 Democratic voters chooses to vote in the Republican primary we would register them as Republicans; and record that the electorate was 60% Republican and 40% Democratic - with zero crossover voting. But this simply isn't right.

So, what to do? Using aggregate data, we could observe the voting behavior over time of individuals in a state to see how Democratic or how Republican they are. But with available survey data, there is an easier and more direct method. A standard question on both academic surveys and media exit polls of voters is designed to determine which, if either, party the voter identifies with. For instance, in 1992 Voter Research and Surveys asked voters leaving the primary polling place "No matter how you voted today, do you usually think of yourself as a: 1) Strong Democrat, 2) Not strong Democrat, 3) Strong Republican, 4) Not strong Republican, 5) independent, 6) something else?"

If we look at the data for the 15 states with **closed primaries** where VRS was in the field, we see that 3% of voters in closed Democratic primaries claim to be Republican identifiers, and 1.9% of voters in closed Republican primaries claim to be Democratic identifiers.[3] This data is presented in Table 2.

Table 2: Crossover voting: Self–reported party id in closed primaries (1992)
1992 - VRS: Closed Primary States
Cumulative Results

Respondent's 2s	Democratic Primary			Republican Primary		
Party-Id	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	15695	689	6712	286	11324	3489
Agg %	67.8	3.0	29.1	1.9	75.0	23.1
$\sigma_x\%$	9.2	1.6	9.2	0.7	7.3	7.5
Min %	44.1	1.4	15.1	0.5	58.7	14.8
Max %	83.3	7.0	51.3	2.9	82.9	39.1

Now for comparison purposes, lets look at the proportion of voters in **open primaries** claiming to identify with the opposite party (Table 3). This is a clean measure of the amount of crossover voting. Turning again to the VRS survey for 1992, we have data for 12 states with open primaries. 5.3% of voters in open Democratic primaries reported to be Republican identifiers; and 4.2% of voters in Republican primaries claimed to be Democratic identifiers.

Now examining individual states we see that the range of crossover voting was not very high (Tables 4 and 5. In the **closed primary** states the most crossover voting in the Democratic primary was in Louisiana, 7%.[4] The least was Kansas with 1.4%. On

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[3]The Republican count is based on only 14 states.

[4]Louisiana is well known for having a variant of a blanket primary for choosing most of its elected

Table 3: Crossover voting: Self–reported party id in open primaries (1992)
1992 - VRS: Open Primary States
Cumulative Results

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	9270	771	4598	482	7684	3402
Agg %	63.3	5.3	31.4	4.2	66.4	29.4
$\sigma_{x\%}$	5.1	1.9	4.4	2.1	4.3	2.7
Min %	53.7	1.6	23.5	1.2	57.3	25.3
Max %	68.9	7.8	39.2	8.7	72.3	34.0

the Republican side Connecticut had the greatest amount of crossover voting, only 2.9%; and Oklahoma had the least, only 0.5%. In California, 2.0% of voters in the Democratic primary claimed to be Republican identifiers, and 1.4% of voters in the Republican primary claimed to be Democratic identifiers.

Looking at individual states with **open primaries** we can get some idea as to the variance in crossover voting that different strategic situations can present (Table 6. Even with open primaries, the highest reported amount of crossover voting in open Democratic primaries is only 7.8%: in Mississippi 7.8% of voters in the Democratic primary claim to identify with the Republican party. And in open Republican primaries the highest level of Democratic identifiers is in Georgia, where 8.7% of voters claim to identify with the Republican party.

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officials. However, it uses a standard closed primary to choose its delegates to the national convention.

Table 4: Crossover voting: Self–reported party id in closed primaries (1992)
1992 - VRS: Closed Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
California	1628	45	588	18	1030	239
	72.0	2.0	26.0	1.4	80.0	18.6
Colorado	881	24	458	22	866	233
	64.6	1.8	33.6	2.0	77.3	20.8
Connecticut	1178	32	474	28	775	169
	70.0	1.9	28.2	2.9	79.7	17.4
Florida	1218	76	418	26	1129	298
	71.1	4.4	24.4	1.8	77.7	20.5
Kansas	405	9	209	12	539	181
	65.0	1.4	33.6	1.6	73.6	24.7
Louisiana	745	73	228	18	641	114
	71.2	7.0	21.8	2.3	82.9	14.8
Massachusetts	678	35	587	21	551	367
	52.2	2.7	45.2	2.2	58.7	39.1
Maryland	1449	90	458	26	999	213
	72.6	4.5	22.9	2.1	80.7	17.2
North Carolina	1213	53	365	20	614	177
	74.4	3.3	22.4	2.5	75.7	21.8
New Hampshire	815	85	949	29	1114	648
	44.1	4.6	51.3	1.6	62.2	36.2

Continued in Table 5.

Table 5: Crossover voting: Self–reported party id in closed primaries (1992)
1992 - VRS: Closed Primary States

Continued From Previous Page

Respondent's	Democratic Primary			Republican Primary		
Party-Id	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
New Jersey	561	21	284	6	446	181
	64.8	2.4	32.8	1.0	70.5	28.6
New York	1167	34	470	–	–	–
	69.8	2.0	28.1	–	–	–
Oklahoma	850	48	255	3	512	113
	73.7	4.2	22.1	0.5	81.5	18.0
Oregon	884	19	423	14	592	245
	66.7	1.4	32.0	1.7	69.6	28.8
Pennsylvania	1297	31	414	25	1013	219
	74.5	1.8	23.8	2.0	80.6	17.4
South Dakota	726	14	132	18	503	92
	83.3	1.6	15.1	2.9	82.1	15.0

Of course to test further for the possibility of increased crossover voting under different strategic or contextual possibilities it makes sense to look at different election years. Thus for 1988 we examined both CBS/NY-Times exit poll data, and National Election Studies surveys.

In the 6 states we have CBS/NY-Times exit poll data for that held **closed primaries**, we again had little crossover voting. Only 2.8% of voters in closed Democratic primaries claimed to be Republican identifiers, and 3.0% of voters in closed Republican primaries claimed to be Democratic identifiers. This is shown in Table 7.

Demonstrating that context can matter, we saw significantly more crossover voting in **open primaries** in 1988 than 1992. In the 4 open primaries we have CBS/NY-Times exit polls for 10.4% of voters in open Democratic primaries claimed to be Republican identifiers. In the 1 open Republican primary we have such exit poll data for, 6.8% of voters claimed to be Democratic identifiers (Table 8).

We see relatively little variance in crossover voting across the states with **closed primaries**. There is large variance across the 4 states with **open primaries**: the amount of crossover voting ranges from 2.9% (Ohio) to 20.5% (Indiana). This is shown in Tables 9 and 10.

In 1984 we analyzed the CBS/New York Times exit poll data for Democratic primaries in five states with **open primaries**: Alabama, Georgia, Illinois, Ohio, and Texas. This was a perfect year to find high amounts of strategic crossover voting by Republicans as the Republican primary was of no interest (Ronald Reagan was unchallenged). Other than local races, there was no reason to vote in the Republican primary. Yet in our five states, only 276 of 6213 voters in Democratic primaries surveyed (4.4%) claimed to be Republican identifiers. The highest crossover rate was in Georgia (7.2%), the lowest in Texas (1.6%). The results are given in Tables 11 and 12.

In the three **closed primary** states we looked at for comparison purposes in 1984 (California, Pennsylvania, and New York), only 142 of 6352 voters surveyed (2.2%) in the Democratic primary classified themselves as Republican identifiers (Tables 12 and 13. So, the difference in crossover voting between open and closed primaries, even in a year that we expect to lead to large amounts of strategic voting, is only 2.2%.

Table 6: Crossover voting: Self–reported party id in open primaries (1992)
1992 - VRS: Open Primary States

Respondent's	Democratic Primary			Republican Primary		
Party-Id	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
Alabama	556	68	353	8	233	103
	56.9	7.0	36.1	2.3	67.7	29.9
Georgia	1011	73	402	119	780	462
	68.0	4.9	27.1	8.7	57.3	34.0
Illinois	916	86	533	23	690	242
	59.7	5.6	34.7	2.4	72.3	25.3
Indiana	489	18	203	21	390	167
	68.9	2.5	28.6	3.6	67.5	28.9
Michigan	963	64	524	54	1018	376
	62.1	4.1	33.8	3.7	70.3	26.0
Minnesota	688	37	32.5	26	447	213
	65.5	3.5	31.0	3.8	65.2	31.1
Mississippi	696	79	238	51	470	223
	68.7	7.8	23.5	6.9	63.2	30.0
Ohio	592	14	261	9	559	206
	68.3	1.6	30.1	1.2	72.2	26.6
South Carolina	620	48	242	49	831	410
	68.1	5.3	26.6	3.8	64.4	31.8
Tenn	646	49	286	35	582	225
	65.9	5.0	29.2	4.2	69.1	26.7
Texas	1139	109	534	32	984	428
	63.9	6.1	30.0	2.2	68.1	29.6
Wisconsin	954	126	697	55	700	347
	53.7	7.1	39.2	5.0	63.5	31.5

Table 7: Crossover Voting: Self–reported party id in closed primaries (1988)

1988 - CBS/NY-Times: Closed Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	6996	255	1845	139	3281	1227
Agg %	76.9	2.8	20.3	3.0	70.6	26.4
$\sigma_x\%$	9.4	0.8	9.1	0.3	9.5	9.8
Min %	58.3	1.5	14.2	2.8	64.9	15.3
Max %	84.3	3.3	38.6	3.3	81.4	32.3

Table 8: Crossover voting: Self–reported party id in open primaries (1988)

1988 - CBS/NY-Times: Open Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	4164	655	1482	63	635	229
Agg %	66.1	10.4	23.5	6.8	68.5	24.7
$\sigma_x\%$	10.6	8.1	8.8	-	-	-
Min %	53.5	2.9	12.8	-	-	-
Max %	79.1	20.5	32.9	-	-	-

Table 9: Crossover voting: Self–reported party id in closed primaries (1988)

1988 - CBS/NY-Times: Closed Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
Iowa	1284	32	313	53	1305	245
	78.8	2.0	19.2	3.3	81.4	15.3
New Hamp	845	45	559	43	988	491
	58.3	3.1	38.6	2.8	64.9	32.3
New Jersey	900	37	224	-	-	-
	77.5	3.2	19.3	-	-	-
New York	1605	62	292	-	-	-
	81.9	3.2	14.9	-	-	-
Penn	1585	65	326	-	-	-
	80.2	3.3	16.5	-	-	-
S. Dakota	777	14	131	43	988	491
	84.3	1.5	14.2	2.8	64.9	32.3

Table 10: Crossover voting: Self–reported party id in open primaries (1988)

1988 - CBS/NY-Times: Open Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
Illinois	1103	83	405	63	635	229
	69.3	5.2	25.5	6.8	68.5	24.7
Indiana	847	260	163	-	-	-
	66.7	20.5	12.8	-	-	-
Ohio	1157	42	264	-	-	-
	79.1	2.9	18.1	-	-	-
Wisconsin	1057	270	650	-	-	-
	53.5	13.7	32.9	-	-	-

Table 11: Crossover voting: Self–reported party id in open primaries (1984)

1984 - CBS/NY-Times: Open Primary States

Cumulative Results

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	4579	276	1358			
Agg %	73.7	4.4	21.9			
$\sigma_{x\%}$	6.0	2.3	4.8			
Min %	69.0	1.6	14.5			
Max %	83.9	7.2	27.0			

Table 12: Crossover voting: Self–reported party id in open primaries (1984)

1984 - CBS/NY-Times: Open Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
State						
Alabama	917	78	238	-	-	-
	74.4	6.3	19.3	-	-	-
Georgia	844	87	280	-	-	-
	69.7	7.2	23.1	-	-	-
Illinois	822	48	321	-	-	-
	69.0	4.0	27.0	-	-	-
Ohio	1088	46	362	-	-	-
	72.7	3.1	24.2	-	-	-
Texas	908	17	157	-	-	-
	83.9	1.6	14.5	-	-	-

Table 13: Crossover voting: Self–reported party id in closed primaries (1984)

1984 - CBS: Closed Primary States
Cumulative Results

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	Rep 2s	Ind 2s	Dem 2s	Rep 2s	Ind 2s
Total	5148	142	1062	–	–	–
Agg %	82.9	2.2	16.7	–	–	–
$\sigma_x\%$	0.9	1.1	0.3	–	–	–
Min %	80.2	0.9	16.4	–	–	–
Max %	82.1	3.0	17.0	–	–	–

We utilized a different survey to evaluate 1980. The National Election Study of 1980 included specific questions of voters about their behavior in the primary. The sample is a national probability sample, rather than exit polls in particular states. The data is presented in Table 14. Here we find higher levels of crossover voting in both closed and open states. In **open primary** states 16.4% of voters in the Democratic primary identified themselves as Republicans, and 6.3% of voters in the Republican primary identified themselves as Democrats. In **closed primary** states 15.4% of voters in the Democratic primary identified themselves as Republicans, and 7.1% of voters in the Republican primary identified themselves as Democrats.

We have examined a large number of elections because we think that the likelihood of crossover voting depends upon the context of the election. The striking fact about our analysis is how little crossover voting open primaries encourage versus closed primaries. We summarize the amount of crossover voting in Table 15. Here we compare crossover voting in **open primary** states to **closed primary** states for 1992, 1988, 1984, and 1980 for both Democratic and Republican primaries. In each year there is more crossover voting in **open primaries** (except 1980 for the Republican primary). However, the difference is only substantively interesting in 1988 for the Democratic primary. In the following section we turn to a more detailed analysis of 1988.

Table 14: Crossover voting: self–reported party id in closed primaries (1984)

1984 - CBS: Closed Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	**Rep 2s**	**Ind 2s**	**Dem** 2s	**Rep 2s**	**Ind 2s**
State						
California	1929	72	403	-	-	-
	80.2	3.0	16.8	-	-	-
New York	1626	18	336	-	-	-
	82.1	0.9	17.0	-	-	-
Penn	1593	52	323	-	-	-
	81.0	2.6	16.4	-	-	-

Table 15: Crossover voting: Self–reported party id in 1980)

Table 13 : Cross Over Voting
Self-Reported Party Id In 1980

1980 - NES: Open Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem 2s	**Rep 2s**	**Ind 2s**	**Dem** 2s	**Rep 2s**	**Ind 2s**
	133	27	5	5	14	61
	80.6	16.4	3.0	6.3	17.5	76.3

1980 - NES: Closed Primary States

Respondent's Party-Id	Democratic Primary			Republican Primary		
	Dem	**Rep**	**Ind**	**Dem**	**Rep**	**Ind**
	83	16	5	6	23	56
	79.8	15.4	4.8	7.1	27.1	65.9

Table 16: Summary of Crossover voting: 1980–1992

| | Democratic Primaries | | Republican Primaries | |
| | Closed | Open | Closed | Open |
Year	Primary	Primary	Primary	Primary
1992	3.0	5.3	1.9	4.2
1988	2.8	10.4	3.0	6.8
1984	1.1	2.3	–	–
1980	15.4	16.4	7.1	6.3

[a]Table entries are the percentage of crossover voters in each primary.

5 How Many Raiders?

While the amount of crossover voting necessarily puts an upper bound on the amount of strategic behavior by voters, we still want to know the motivation of the crossover voters. The most pernicious attempt at strategic voting would be for voters to attempt to 'interfere' and 'sabotage' the primary of the other party by crossing over and voting in the opposing party's primary in an attempt to give the other party the *weakest* general election nominee. We looked for raiders in the 1988 Super Tuesday primaries. This is an appropriate election to search for raiders because the requisite circumstances for raiding were present: the Republican primary was largely a foregone conclusion in the minds of most voters (George Bush was looking unbeatable), and the Democratic primary offered a large selection of candidates - some of whom were probably not likely to be strong candidates in a general election.

To determine if a crossover voter is attempting to act as a raider we need to know if the voter is intentionally voting for a candidate that they perceive to be a loser in the general election. Here are the requirements a voter had to meet for us to classify them as a raider:

1. They had to crossover and vote in the primary of the party that they did *not* identify with.

2. There had to be a candidate available in the primary they voted in whom they did *not* vote for, and:

    (a) Who they preferred to the candidate they did vote for, and

    (b) Who they felt had a better chance of winning the general election than the candidate they voted for.

3. They had to want the party they identified with to win the general election.

We thus need quite a lot of information about a voter's preferences regarding the candidates, and the voter's beliefs about the relative likelihood of candidates winning the general election. The National Election Study's 1988 "Super Tuesday Study" conducted by the Center for Political Studies of the Institute for Social Research, was designed to elicit this type of information from voters. The study consisted both of a pre-primary questionnaire, and a post-primary interview that was administered to 1688 respondents. 719 of those respondents reported voting in a primary.

We determined whether a voter crossed over by comparing their self-reported partisan identification to the primary they voted in. A voter who reported voting in the Republican primary but claimed to identify with the Democratic primary was classified as a crossover voter; as was a voter who reported voting in the Democratic primary but claimed to identify with the Republican primary. To determine whether these crossover voters had a more preferred candidate available to them, we utilized their responses to the "Feeling Thermometer" questions the NES asked. The precise question asked was:

Now let's talk about your feelings toward the people you know something about. I'll read the name of a person and I will ask you to rate that person on a thermometer that runs from 0 to 100 degrees. Ratings between 50 and 100 degrees mean that you feel favorable and warm toward that person. Ratings between 0 and 50 degrees mean that you don't feel too favorable and are cool toward that person. You may use any number from 0 to 100 to tell me how favorable or unfavorable your feelings are for each person. If you don't feel particularly warm or cold toward the person, you would rate the person at the 50 degree mark.

The first person is XXXXXXXXXXX. How would you rate (him/her) using this thermometer?

If a respondent listed one of the candidates in the primary they voted in as having a *higher* thermometer score than the candidate they voted for, we considered them to be potential raiders.

Raiding also requires the voter to consciously vote for a candidate they expect to have little chance in the general election. Again, the National Election Study explicitly elicits the respondents' opinion on this. Respondents were asked:

Now, thinking about general election to be held this November we'd like you to tell us about some of the candidate's chances of winning the presidency in 1988. As before, we will use a scale that runs from 0 to 100, where 0 represents no chance of winning the presidency, 50 represents an even chance, and 100 represents certain victory.

Thus we can compare the respondents' explicit evaluation of the chances of the candidate he or she voted for with the chances of each of the other candidates available in the same primary. If the respondent votes for a candidate that they both "feel less warmly" about, and think has a lower chance of winning the general election, than another available candidate - then we cannot but think that their intention is to raid, not to insure that each primary will produce a candidate they view favorably.

We provide results in Table 16. There, we see that the results are as follows: 97 of the 719 voters (13.5%) reported crossing over. However, of the 719 primary voters, only 557 of them were willing to assign feeling thermometer ratings to the candidate they voted for. 65 of these 557 voters crossed over. 35 of the 291 (12.0%) voters in open primaries (12.0%) crossed over, and 30 of the 266 voters (11.3%) in closed primaries crossed over. Thus as we have consistently seen, the crossover rate is low. Of the 65 crossover voters, 9 reported motivations consistent with raiding! Of these, 4 were in open primaries, and 5 were in closed primaries.

We broke the crossover voters down further by motivation. We defined **true supporters** as people who crossed over to vote for the candidate who they regarded as the best option *in either primary* according to their feeling thermometer rankings. We

defined **second best voters** as people who crossed over to vote for the *best* candidate available in the primary they voted in, though their first choice was available in their own primary: these were people who presumably thought that their own primary was a foregone conclusion; but wanted their most preferred candidate from the other primary available as an alternative in the general election should their own party's candidate lose in November. These are people looking for insurance. We defined **positive strategic** voters as voters who crossed over to vote for a candidate presumably because they felt their own primary was a foregone conclusion, and while they did not vote for their most preferred alternative available in the primary they were voting in, there was no preferred alternative *with as high a perceived chance of winning the primary.* Thus again, these were voters who we felt were trying to get some insurance for the general election.

Of the 35 voters who crossed over in open primaries, 13 were **true supporters** - voters crossing over because the grass was greener on the other side and they found their favorite candidate there. 14 of these 35 crossover voters met our conditions for being **second best voters**: they were voting for their preferred candidate in the primary they were voting in. Of the 8 remaining voters, 3 were **positive strategic**, 4 were **raiders**, and 1 did not fit any of our categories.

Of the 30 voters who crossed over in closed primaries, 10 were **true supporters**. 11 were **second best**, 3 were **positive strategic**, 5 were **raiders**, and 1 was not classified in any of our categories.

Table 17: Motivation of 1988 Super Tuesday crossover voters

	Open Primaries	Closed Primaries
True Supporters	13	10
	28.6%	33.3%
	4.5%	3.8%
Second Best	14	11
	40%	36.7%
	4.8%	4.1%
Positive Strategic	3	3
	8.6%	10%
	1.0%	1.1%
Raiders	4	5
	11.4%	16.7%
	1.4%	1.9%
Other	1	1
	2.9%	3.3%
	0.3%	0.4%
Total Crossover	35	30
Total Voters	291	266

[a]The first percentage for each category of voter is based on the number of crossover voters; the second percentage in each category is based on the number of primary voters.

6 Conclusion of Individual Analysis

We have demonstrated that open primaries do not lead to a substantively large increase in crossover voting over closed primaries. And we have argued that the existing literature on voter behavior suggests that any crossover voting that occurs will be motivated by voters' desire to vote for their first-choice candidate, or, to a lesser extent, to avoid wasting their vote. Voters will simply not have the information necessary to engage in raiding behavior in primaries. We find that our empirical analysis of the 1988 Super Tuesday primary provides overwhelming evidence to support this claim. By carefully examining the voters' evaluations of the available candidates, and the voters' perceptions of the candidates' chances of winning both the primary and general election, we have been able to demonstrate that fewer than 2% of voters in the primary engaged in raiding behavior.

It is our view that the blanket primary will not lead to large amounts of strategic behavior by voters. The possibility of strategic behavior in a primary is significantly different than in multi-candidate general elections.

7 Ecological Evidence for Crossover Voting

Thus far we have offered a considerable body of evidence which shows that the incidence of crossover voting in open primaries is relatively low. Also we have shown that the motivations for crossover voting at the individual voter level are usually not malicious; in other words, we have found very little evidence for voter intentional "raiding" of the opposing party's primary.

In this section of our report we turn to a different type of analysis of crossover voting. Here we examine not individual–level surveys of voters leaving the polling place on election day, but instead we examine aggregated county–level statistics of primary election outcomes in two states, Washington and Ohio.[5] Using the aggregated county–level statistics provides us a different way to study the incidence of crossover voting in open primary elections, thus providing additional validity to the individual–level studies we have previously conducted. The analyses we report on in this section of our report also allow us to extend our analysis of crossover voting to different types of primary elections and importantly, to a state with a primary election institution which could be quite similar to the type of open primary election which California has adopted after the

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[5]As we will explain in more detail below, there are three reasons we study these states. First, Washington is an important case for our analysis, since it is a state which also has a blanket primary — the same type of primary system which California has adopted with the passage of Proposition 198. Second, Ohio is an open primary state, and therefore it will be useful for us to compare estimates of crossover voting using aggregated electoral statistics from an open primary state to a blanket primary state. Third, Ohio's primary requires voter registration, but any registered voter may cast a ballot in either party's primary. This gives us excellent data on the partisan composition of each county.

passage of Proposition 198 — the blanket primary system as it is employed in the state of Washington.

Thus, more specifically, we study the following primary elections using aggregated county–level voting returns:

- Washington's 1992 Senate race.

- Washington's 1992 Gubernatorial race.

- Washington's 1996 Gubernatorial race.

- Washington's 1996 Lt. Governor race.

- Washington's 1996 Secretary of State race.

- Washington's 1996 Treasurer race.

- Washington's 1996 Insurance Commissioner race.

- Washington's 1996 Auditor race.

- Washington's 1996 Attorney General race.

- Washington's 1996 Commissioner of Public Land race.

- Ohio's 1992 Senate race.

- Ohio's 1994 Senate race.

- Ohio's 1994 Gubernatorial race.

We study all of these recent races in Washington and Ohio for a number of important reasons.

1. **Cross–validation**. By examining aggregated electoral returns we obtain estimates of crossover voting using different data and different statistical techniques. We obtain estimates of the extent of crossover voting using the aggregated data which are very similar to the estimates we obtained using the primary election exit polls in the previous sections of our report. This greatly strengthens the validity of our findings in both sections of this report, allowing us to state much more strongly that the incidence of crossover voting in open primary states is low.[6]

2. **Examination of sub–presidential primary races**. Our studies of crossover voting using exit poll data were limited to only crossover as it related to presidential primary elections. While presidential primary races are quite important and quite visible elections, they are not the only races on primary ballots. There are many

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[6]See Stone 1974 on the importance of cross–validation.

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other types of races on primary ballots, ranging from state–wide races for prominent seats like U.S. Senate and Gubernatorial seats, to other state–wide races for positions of perhaps lesser electoral prominence, like the Secretary of State or the State Treasurer. It is important to obtain estimates of the extent of voter crossover in these sub–presidential races as well, so that we can determine if crossover is greater or lesser in these sub–presidential elections.

3. **Examination of crossover voting in blanket primaries**. Thus far, our exit poll analyses have been primary of crossover voting in open primary states. Unfortunately, the exit poll data we have used in the previous parts of our study do not cover primary elections in the State of Washington, which is a state near to California both culturally and politically. But most importantly, Washington has a blanket primary system, which is the type of primary election institution which will be adopted by California under Proposition 198. Thus by studying the aggregated electoral data from Washington we can better understand the incidence of crossover voting in a blanket primary state and determine whether the incidence of crossover voting is any different than in open primary states.

We begin our analysis of the aggregated electoral data by describing the methodology of our analysis. We then turn to a discussion of the results we obtain in all of these races. Our conclusion to this section contains a discussion of the general importance of the results we obtain using the aggregated electoral statistics for the study of crossover voting.

7.1 Methodology used to study crossover voting with aggregated data

The data we use for this component of our study come from two different sources. The data used for the 1992 and 1994 Senate and Gubernatorial primary elections in both Ohio and Washington were taken directly from McGillivray (1993, 1995).[7] For our study of the 1996 primary elections in Washington, the data for each of the eight state–wide races we examine were provided by the Washington Secretary of State.

Our general approach is best summarized by example. In Table 18 the columns give the percentage of Democratic (T) and Republican partisans (1-T) in a particular county.[8] The rows give the percentage of votes cast for Democratic primary candidates (X) and the percentage of votes cast for Republican primary candidates (1-X). We obtain county–by–county figures for each of these percentages from the sources listed above.

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[7]Alice V. McGillivray, *Congressional and Gubernatorial Primaries, 1991–1992: A Handbook of Election Statistics*, Washington, D.C.: Congressional Quarterly, 1993; Alice V. McGillivray, *Congressional and Gubernatorial Primaries, 1993–1994: A Handbook of Election Statistics*, Washington, D.C.: Congressional Quarterly, 1995.

[8]For the purposes of this example, we define partisans as either identifiers or those who are registered in the particular party.

Table 18: Crossover voting example

Percentage of Votes	Percentage of Partisans		
	Democratic	Republican	
Democratic	DS	DC	X
Republican	RC	RS	1 - X
	T	1 - T	

What we want to know, though, are the four unknown quantities in Table 18. Two of these quantities are DS and RS, which are the percentage of Democratic identifiers in the county voting "straight" for Democratic primary candidates and the percentage of Republican identifiers in the county voting "straight" for Republican primary candidates. These are not of interest in our discussion here. The other two quantities, though, are of extreme interest to us. They are given by DC (the percentage of Democratic identifiers in the county voting "crossover" ballots for Republican primary candidates) and RC (the percentage of Republican identifiers in the county voting "crossover" ballots for Democratic primary candidates).

Producing estimates of these quantities of interest, then, will entail the use of aggregated data to make inferences about individual–level behavior. Producing estimates of this sort has been called "ecological inference" in the social science and statistics literature, and has been the subject of considerable academic discussion for over 75 years. Here we use the newly developed "generalized method of bounds" to produce estimates of DC and RC from our county–level data (King 1997).[9] King's approach takes generalized the ecological inference models developed in the past 25 years (Claggett and Van Wingen 1993; Duncan and Davis 1963; Dykstra 1986; Flanigan and Zingale 1985; Kousser 1986; Shively (1974, 1991), and Sigelman (1991)) and produces a technique for "ecological inference" which avoids the pitfalls of the previous approaches (King 1997).

Thus, armed with knowledge of the percentages of votes cast for Democratic and Republican primary candidates in each county, and the percentages of Democratic and Republican partisan identifiers in each county, we can produce county–by–county estimates of both Democratic and Republican crossover using King's "generalized method of bounds." This is exactly what we do with the Ohio data from 1992 and 1994, since under Ohio's open primary system we know exactly the number of votes cast and the number of partisans in each county.[10] But under Washington's blanket primary system,

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[9]King defines an **ecological inference**: *Ecological inference* is the process of using aggregate (i.e., "ecological") data to infer discrete individual–level relationships of interest when individual–level data are not available. Existing methods (before King's work) of ecological inference generate very inaccurate conclusions about the empirical world—which thus gives rise to the ecological inference *problem*" (King 1997: p. xv). King's ecological inference technique has been used in one recent court case: *William Mallory et al. vs. State of Ohio, George V. Voinovich et al.*, U.S. District Court, Southern District of Ohio, Eastern Division (Case Number C-2-95-381, Judge George C. Smith).

[10]Ohio's open primary requires voter registration. Any registered voter may cast a ballot in either party's primary, but local lists are maintained of each individual's voting history and crossover voters have to sign forms.

voter party registration is not required; hence we do not have county–by–county data of party registration. Instead, we produce an estimate of the partisan composition of each county by using the county average of the votes cast across all of the state–wide races in that election year for which we have data.[11]

7.2 Discussion of the results

We present our results in two different formats. In Table 19 we provide the state–wide estimates of crossover voting in each of these races, beginning with Washington at the top and Ohio at the bottom. These will be the focus of our discussion. We provide in Tables 20, 21, 22, 23, 24 and 25 the county–by–county crossover voting estimates which form the basis of the estimates in Table 19.

Table 19 is organized so that we give two average estimates of crossover voting for each primary race — the first estimate is the percentage of Republicans crossing over to vote for Democratic primary candidates and the second is the percentage of Democrats crossing over to vote for Republican primary candidates. The first aspect of our discussion of these results focuses on the general extent of crossover voting we estimate with the ecological data. Notice that in only two cases do we estimate that 20% or more of one party's voters crossover to vote for candidates of the opposing party: Republican crossover in the Washington 1992 Senate race (20%) and Democratic crossover in the Washington 1996 Secretary of State's race (24%). The first election was for an open Senate seat, formerly held by incumbent Democrat Brock Adams. On the Democratic side, political–newcomer Patty Murray ran against a former U.S. House member Don Bonker. There were three candidates in the Republican race, the best–known being a U.S. House representative, Rod Chandler. Thus, it seems that some Republicans crossed over to vote in the Democratic race between Murray and Bonker. The other race where we find considerable crossover voting is one in which there was only one Democratic and one Republican candidate running in the primary (1996 Washington Secretary of State).

In the rest of the cases in Table 19 we find that the amount of crossover voting 15% or less, which indicates that there is not much crossover voting in this set of elections. We also can discern no reliable patterns in this set of results. First, we do not see any evidence that there is any systematic partisan difference in the propensity to crossover — Republicans seem just as likely to crossover as Democrats. This also implies that neither party is disproportionately hurt by crossover voting. Second, we do not see that there is much of a difference between the most visible primary races in Ohio and Washington. Thus, it does not seem that when it comes to the highly–visible races for gubernatorial or U.S. Senate seats that the blanket primary leads to a greater incidence of crossover voting than an open primary. Third, we see that crossover voting not more likely in highly–visible races than it is in less–visible state government positions. In the 1996 Washington

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[11]This means that we use the county average vote in 1996 across all of the eight state–wide races and the same average in 1992 for the two state–wide races. This is one way to measure the baseline partisan division in a geographic location when survey data are unavailable.

Table 19: Ecological Crossover Voting Estimates, Ohio and Washington

State	Race	Crossover	County Average	Standard Deviation	Counties
Washington	1992 Governor	Republican	.09	.04	39
Washington	1992 Governor	Democratic	.17	.02	39
Washington	1992 Senate	Republican	.20	.08	39
Washington	1992 Senate	Democratic	.04	.006	39
Washington	1996 Governor	Republican	.15	.05	39
Washington	1996 Governor	Democratic	.19	.006	39
Washington	1996 Lt. Governor	Republican	.18	.03	39
Washington	1996 Lt. Governor	Democratic	.10	.03	39
Washington	1996 Sec. of State	Republican	.05	.003	39
Washington	1996 Sec. of State	Democratic	.24	.07	39
Washington	1996 Treasurer	Republican	.12	.04	39
Washington	1996 Treasurer	Democratic	.11	.02	39
Washington	1996 Ins. Comm.	Republican	.14	.04	39
Washington	1996 Ins. Comm.	Democratic	.10	.03	39
Washington	1996 Auditor	Republican	.14	.03	39
Washington	1996 Auditor	Democratic	.12	.02	39
Washington	1996 Attn. General	Republican	.13	.04	39
Washington	1996 Attn. General	Democratic	.006	.001	39
Washington	1996 Comm. of Pub. Land	Republican	.13	.03	39
Washington	1996 Comm. of Pub. Land	Democratic	.12	.02	39
Ohio	1992 Senate	Republican	.04	.03	88
Ohio	1992 Senate	Democratic	.15	.09	88
Ohio	1994 Senate	Republican	.04	.04	88
Ohio	1994 Senate	Democratic	.03	.08	88
Ohio	1994 Governor	Republican	.13	.04	88
Ohio	1994 Governor	Democratic	.18	.06	88

results, for example, we find that the incidence of crossover voting was much different in the governor's primary than it was in the primary voting for the Commissioner of Public Lands.

7.3 What has the aggegated electoral data demonstrated?

To conclude, we have shown that there was not a great deal of crossover voting in the aggregated data we examined using 1992, 1994, and 1996 county–by–county electoral returns from Ohio and Washington, across a number of different primary elections. In general, we found in the ecological estimates that crossover voting averaged 12% for the thirteen races we examined.

This analysis of the ecological data, then, leads us to have much more confidence in our hypothesis that the incidence of crossover voting in open and blanket primaries is not very great. The evidence presented here cross–validates our empirical results using the exit poll data earlier in this report. Here, we do estimate that the extent of crossover voting in open and blanket primaries is slightly greater than we found using the exit poll data from a number of recent presidential primaries across many states. This could be the result of one of two phenomenon. On one hand, our ecological analysis might be overestimating the incidence of crossover voting. If that is the case, **then the amount crossover voting in these races is much lower.** On the other hand, if our ecological analysis is correct but the exit poll analysis is incorrect, **then the amount of crossover voting in these races is correct.** But in either case, we are very confident, on the basis of two fundamentally different types of empirical evidence and statistical approaches, that the amount of crossover voting in open and blanket primaries is no higher than the level we have estimated using the ecological data. Hence, the amount of crossover voting in open and blanket primaries is relatively slight.

Additionally, the ecological results in this section of our report help to provide answers to two other important questions. The first concerns the incidence of crossover voting in non–presidential primary elections. We have shown above (and just discussed in the previous paragraph) that we find little support for the argument that the incidence of crossover voting is higher in sub–presidential primaries. Also, using the ecological data, we have found that the incidence of crossover voting in visible state–wide races is not any greater or lesser than for less prominent state–wide races.

Last, we have provided some evidence here that crossover voting in blanket primaries is not dramatically higher than in other types of open primary systems. Washington's blanket primary process is very similar to what might be instituted in California; using the ecological data we have provided evidence that the blanket primary in Washington does not produce levels of crossover voting which are much different from levels of crossover voting in other types of open primaries (for example, in Ohio).

8 Conclusion

In this report we have presented an extensive array of data analysis: spanning a variety of primary election years, different states, various types of primary election institutions, different types of data and different types of statistical analysis. Our purpose has been

to determine what the extent of crossover voting is in states with open and blanket primaries. Additionally, we have also probed into the data further to understand what motivates individual voters to crossover and vote for candidates of the opposing party — in particular, whether these voters are doing so for strategic reasons.

We began this report by discussing the relevant academic literature on strategic voting in political behavior and on crossover voting in primary elections. There we noted that in this literature the estimated incidence of strategic political behavior, of crossover voting, and of primary election "raiding", is relatively slight. Additionally, we briefly mentioned some of the problems which we have observed with the empirical analyses in the literature.

We then produced our own extensive analysis of both the publically available survey data and of some aggregated electoral statistics from Ohio and Washington. Using different statistical approaches to analyzing these different databases, we have developed three conclusions about crossover voting in open and blanket primaries and about the potential for strategic voter behavior in open and blanket primaries:

1. there is very little crossover voting in general in primary elections in the United States;

2. the difference in the amount of crossover voting between states with open primaries and closed primaries is not substantively large;

3. the amount of strategic behavior on the part of voters in primary elections is small.

We believe that these conclusions shed light on what will happen when California voters encounter the new open primary system in the future. There is no reason to believe that the amount of crossover voting will be any different in California than in the many cases we have examined. Also, we believe that our results show that most of the crossover voters will be motivated to cast ballots for opposing party primary candidates simple because they prefer those candidates to the candidates offered in their own party's primary, or they view their own party primary as a foregone conclusion and want the best possible set of candidates to choose from in the general election. We believe that few California primary election voters will engage pernicious raiding in the opposing party's primary.

9   Appendix: County–by–county ecological estimates of crossover voting

Table 20: Ecological Crossover Voting Estimates, Washington 1992 and 1994

Estimated Percent of Crossover Voting

| County | 1992 Governor | | 1992 Senate | |
	Rep.	Dem.	Rep.	Dem.
ADAMS	0.1034	0.1749	0.3291	0.0318
ASOTIN	0.032	0.1994	0.1782	0.0447
BENTON	0.1019	0.1688	0.3735	0.0284
CHELAN	0.1369	0.1451	0.2671	0.0344
CLALLAM	0.1069	0.1604	0.1702	0.0434
CLARK	0.0667	0.1722	0.1322	0.0473
COLUMBIA	0.1124	0.1695	0.3057	0.0311
COWLITZ	0.0179	0.2207	0.1659	0.0409
DOUGLAS	0.1124	0.1493	0.2845	0.0315
FERRY	0.0485	0.1922	0.2107	0.0434
FRANKLIN	0.0955	0.1749	0.3391	0.0308
GARFIELD	0.0689	0.1949	0.3125	0.0396
GRANT	0.1336	0.1405	0.2577	0.0316
GRAYS HARBOR	0.0298	0.1933	0.1322	0.0431
ISLAND	0.1727	0.147	0.1141	0.0414
JEFFERSON	0.1004	0.1652	0.1038	0.0479
KING	0.1362	0.1529	0.0546	0.0464
KITSAP	0.1583	0.1524	0.0867	0.0413
KITTITAS	0.0984	0.1638	0.2219	0.0357
KLICKITAT	0.056	0.1942	0.2405	0.0435
LEWIS	0.1221	0.1587	0.2168	0.0345
LINCOLN	0.098	0.1662	0.2807	0.0303
MASON	0.0879	0.1624	0.1434	0.0452
OKANOGAN	0.0568	0.191	0.2568	0.0446
PACIFIC	0.0183	0.2096	0.1332	0.0426
PEND OREILLE	0.0632	0.187	0.204	0.0444
PIERCE	0.1472	0.1462	0.1029	0.0408
SAN JUAN	0.1462	0.1491	0.0818	0.045
SKAGIT	0.1512	0.1443	0.1064	0.0415
SKAMANIA	0.0465	0.1866	0.1787	0.0453
SNOHOMISH	0.1362	0.1535	0.0962	0.0438
SPOKANE	0.0741	0.177	0.1998	0.0445
STEVENS	0.0995	0.1705	0.2382	0.0362
THURSTON	0.062	0.1852	0.1764	0.0416
WAHKIAKUM	0.0159	0.2478	0.2065	0.0429
WALLA WALLA	0.0614	0.1826	0.2743	0.0408
WHATCOM	0.1599	0.1417	0.0871	0.0417
WHITMAN	0.1007	0.1682	0.198	0.0425
YAKIMA	0.0844	0.1719	0.3479	0.0303

Table 21: Ecological Crossover Voting Estimates, Washington 1996
Estimated Percent of Crossover Voting

County	Governor		Lt. Governor		Sec. of State	
	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.
ADAMS	0.1267	0.1976	0.2139	0.052	0.0496	0.198
ASOTIN	0.0708	0.2041	0.178	0.0899	0.0515	0.1982
BENTON	0.2602	0.1799	0.1706	0.0845	0.0503	0.1967
CHELAN	0.1255	0.2003	0.2065	0.0567	0.0448	0.2302
CLALLAM	0.1986	0.1859	0.2098	0.0747	0.0471	0.2398
CLARK	0.1805	0.1927	0.1607	0.1132	0.0541	0.1594
COLUMBIA	0.1408	0.1928	0.1829	0.0844	0.0492	0.2025
COWLITZ	0.125	0.1965	0.1545	0.1103	0.0525	0.2099
DOUGLAS	0.1417	0.1986	0.1873	0.0635	0.0456	0.2045
FERRY	0.0945	0.2023	0.154	0.104	0.0508	0.1626
FRANKLIN	0.2239	0.1871	0.1709	0.0822	0.0474	0.1882
GARFIELD	0.1253	0.2	0.2166	0.0604	0.0476	0.228
GRANT	0.1859	0.1881	0.1891	0.0613	0.0485	0.1967
GRAYS HARBOR	0.0918	0.1969	0.184	0.0911	0.0532	0.423
ISLAND	0.202	0.1865	0.2106	0.0732	0.0488	0.2446
JEFFERSON	0.1322	0.1957	0.1825	0.103	0.0497	0.2814
KING	0.1357	0.1924	0.1418	0.1162	0.0517	0.3262
KITSAP	0.139	0.1954	0.2111	0.0848	0.0507	0.3198
KITTITAS	0.1585	0.1908	0.1971	0.0815	0.0494	0.3256
KLICKITAT	0.1802	0.1902	0.1777	0.093	0.0514	0.1382
LEWIS	0.2471	0.1818	0.1984	0.0751	0.0466	0.2101
LINCOLN	0.1846	0.1895	0.171	0.0869	0.0493	0.1654
MASON	0.1069	0.1963	0.3026	0.1021	0.0495	0.3464
OKANOGAN	0.1827	0.1901	0.2072	0.0569	0.0494	0.1568
PACIFIC	0.1342	0.1915	0.1284	0.1026	0.052	0.3685
PEND OREILLE	0.1015	0.2009	0.1446	0.1207	0.0553	0.1827
PIERCE	0.1245	0.1928	0.1442	0.1229	0.0499	0.2979
SAN JUAN	0.2012	0.1931	0.1443	0.1294	0.0491	0.2807
SKAGIT	0.2063	0.1895	0.1767	0.0942	0.0481	0.2537
SKAMANIA	0.0942	0.1983	0.1532	0.1116	0.0566	0.1598
SNOHOMISH	0.192	0.1915	0.1763	0.0905	0.0545	0.286
SPOKANE	0.1569	0.194	0.1509	0.1963	0.0494	0.2133
STEVENS	0.1759	0.1954	0.166	0.0856	0.0478	0.1467
THURSTON	0.1189	0.1938	0.1659	0.0913	0.0509	0.4209
WAHKIAKUM	0.1437	0.1956	0.145	0.1096	0.0503	0.2934
WALLA WALLA	0.1337	0.1934	0.1853	0.0848	0.0511	0.2393
WHATCOM	0.1987	0.1852	0.1484	0.2035	0.0526	0.2444
WHITMAN	0.1413	0.1934	0.1765	0.0856	0.0479	0.2303
YAKIMA	0.2688	0.184	0.174	0.0904	0.0515	0.2028

Table 22: Ecological Crossover Voting Estimates, Washington 1996
Estimated Percent of Crossover Voting

County	Treasurer		Ins. Commissioner		Auditor	
	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.
ADAMS	0.2009	0.0694	0.189	0.068	0.1473	0.105
ASOTIN	0.1336	0.0971	0.0979	0.1188	0.2005	0.0913
BENTON	0.108	0.1053	0.159	0.0787	0.1153	0.165
CHELAN	0.1396	0.0896	0.2097	0.0578	0.168	0.0784
CLALLAM	0.0962	0.1154	0.1283	0.0983	0.1021	0.1497
CLARK	0.0921	0.1189	0.1399	0.0974	0.1311	0.1089
COLUMBIA	0.1703	0.0862	0.1525	0.0907	0.1365	0.1174
COWLITZ	0.1248	0.1068	0.0895	0.1572	0.1297	0.1235
DOUGLAS	0.1648	0.0807	0.1938	0.06	0.1861	0.0813
FERRY	0.1298	0.0972	0.1705	0.084	0.1147	0.1459
FRANKLIN	0.1197	0.1006	0.1416	0.0843	0.116	0.1236
GARFIELD	0.1129	0.0932	0.1892	0.0786	0.1599	0.0918
GRANT	0.1395	0.0885	0.1762	0.0675	0.1435	0.1174
GRAYS HARBOR	0.1441	0.1173	0.0738	0.1414	0.066	0.1421
ISLAND	0.0678	0.1357	0.1228	0.1018	0.1262	0.1123
JEFFERSON	0.0599	0.1504	0.125	0.1136	0.1194	0.1353
KING	0.0628	0.1394	0.1033	0.1221	0.1402	0.1153
KITSAP	0.0731	0.1268	0.1276	0.1162	0.1582	0.1099
KITTITAS	0.0782	0.1317	0.168	0.0996	0.1361	0.121
KLICKITAT	0.1598	0.0864	0.1092	0.0952	0.1224	0.1246
LEWIS	0.1342	0.0901	0.1232	0.0839	0.1456	0.1014
LINCOLN	0.1554	0.0749	0.1999	0.0606	0.157	0.0868
MASON	0.0887	0.1209	0.117	0.1134	0.0571	0.2089
OKANOGAN	0.0885	0.1286	0.2047	0.0677	0.1638	0.0873
PACIFIC	0.0971	0.126	0.0791	0.1552	0.111	0.1306
PEND OREILLE	0.1127	0.1091	0.1677	0.0931	0.1167	0.1307
PIERCE	0.0637	0.1446	0.0943	0.126	0.2152	0.0968
SAN JUAN	0.0483	0.1608	0.1244	0.1074	0.0899	0.1536
SKAGIT	0.1061	0.1116	0.1203	0.0993	0.1282	0.1359
SKAMANIA	0.0815	0.1232	0.1298	0.1071	0.1187	0.1156
SNOHOMISH	0.0745	0.1293	0.1004	0.1199	0.1333	0.1197
SPOKANE	0.1307	0.0973	0.1893	0.0885	0.1232	0.1319
STEVENS	0.1649	0.0832	0.2229	0.061	0.1436	0.1129
THURSTON	0.1805	0.1	0.088	0.1493	0.1372	0.1137
WAHKIAKUM	0.1405	0.1059	0.0805	0.1635	0.1666	0.1145
WALLA WALLA	0.106	0.117	0.172	0.0844	0.1443	0.1036
WHATCOM	0.1139	0.1104	0.1545	0.0888	0.1401	0.1151
WHITMAN	0.1164	0.1052	0.2217	0.0731	0.143	0.1075
YAKIMA	0.1166	0.0971	0.1645	0.0752	0.1441	0.1247

Table 23: Ecological Crossover Voting Estimates, Washington 1996

Estimated Percent of Crossover Voting

County	Attny. General		Comm. of Pub. Land	
	Rep.	Dem.	Rep.	Dem.
ADAMS	0.1834	0.0038	0.1049	0.1209
ASOTIN	0.0635	0.0088	0.0885	0.152
BENTON	0.2004	0.004	0.1272	0.1043
CHELAN	0.1926	0.0039	0.1995	0.0807
CLALLAM	0.114	0.006	0.132	0.1239
CLARK	0.0557	0.0083	0.1437	0.1134
COLUMBIA	0.1733	0.0041	0.1128	0.1223
COWLITZ	0.0764	0.0073	0.1182	0.1442
DOUGLAS	0.179	0.0042	0.1705	0.0851
FERRY	0.1275	0.0053	0.1402	0.1168
FRANKLIN	0.1541	0.0039	0.1266	0.1101
GARFIELD	0.0946	0.0068	0.1546	0.1021
GRANT	0.151	0.0041	0.1278	0.1077
GRAYS HARBOR	0.1076	0.0054	0.096	0.1819
ISLAND	0.1354	0.0057	0.1479	0.1076
JEFFERSON	0.0919	0.006	0.1402	0.1346
KING	0.1171	0.0068	0.1337	0.1505
KITSAP	0.1207	0.0051	0.1516	0.127
KITTITAS	0.1616	0.0052	0.1363	0.1248
KLICKITAT	0.0955	0.0063	0.1098	0.1257
LEWIS	0.1393	0.0052	0.1322	0.0959
LINCOLN	0.1294	0.0051	0.1283	0.098
MASON	0.1167	0.0057	0.1151	0.1402
OKANOGAN	0.1574	0.0044	0.1054	0.1151
PACIFIC	0.0835	0.0063	0.0924	0.2056
PEND OREILLE	0.1002	0.0065	0.1177	0.1299
PIERCE	0.107	0.007	0.1195	0.1471
SAN JUAN	0.0981	0.0058	0.1711	0.1365
SKAGIT	0.1203	0.0058	0.1591	0.1075
SKAMANIA	0.0692	0.0078	0.1464	0.1215
SNOHOMISH	0.1206	0.0057	0.1165	0.1325
SPOKANE	0.1687	0.0046	0.1201	0.1242
STEVENS	0.1334	0.0051	0.1204	0.1089
THURSTON	0.1417	0.0052	0.1255	0.1521
WAHKIAKUM	0.0752	0.0072	0.1031	0.163
WALLA WALLA	0.1506	0.0043	0.124	0.1145
WHATCOM	0.1394	0.0046	0.201	0.1038
WHITMAN	0.1386	0.0042	0.1089	0.1188
YAKIMA	0.0905	0.0075	0.1242	0.1163

Table 24: Ecological Crossover Voting Estimates, Ohio 1992 and 1994

Estimated Percent of Crossover Voting

	1992 Senate		1994 Senate		1992 Governor	
County	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.
ADAMS	0.0357	0.148	0.143	0.007	0.1919	0.0884
ALLEN	0.0279	0.1973	0.0169	0.0159	0.1688	0.1106
ASHLAND	0.0409	0.0841	0.0169	0.0133	0.1569	0.1605
ASHTABULA	0.0234	0.3681	0.0108	0.0423	0.085	0.2313
ATHEN	0.0611	0.0614	0.0118	0.0423	0.0677	0.2636
AUGLAIZE	0.0344	0.1305	0.0419	0.0091	0.1622	0.1407
BELMONT	0.0159	0.2127	0.0364	0.0242	0.0307	0.2393
BROWN	0.0282	0.1971	0.0528	0.0157	0.1087	0.1851
BUTLER	0.0361	0.1234	0.0138	0.0251	0.1539	0.1409
CARROL	0.0251	0.2384	0.1487	0.0075	0.2059	0.1146
CHAMPAIGN	0.0434	0.0873	0.0173	0.014	0.1689	0.1125
CLARK	0.03	0.1762	0.012	0.0377	0.1261	0.1977
CLERMONT	0.0272	0.1645	0.0179	0.0485	0.1536	0.1326
CLINTON	0.034	0.1	0.0193	0.0329	0.1743	0.0787
COLUMBIANA	0.0421	0.075	0.0103	0.0839	0.097	0.1808
COSHOCTON	0.0373	0.0907	0.0206	0.0142	0.1333	0.187
CRAWFORD	0.0262	0.2011	0.0484	0.01	0.1362	0.1801
CUYAHOGA	0.0209	0.2768	0.0068	0.0386	0.0484	0.3272
DARKE	0.0299	0.2368	0.1855	0.0062	0.2259	0.0962
DEFIANCE	0.0572	0.0287	0.0186	0.0196	0.1564	0.1609
DELAWARE	0.0313	0.1942	0.0464	0.0059	0.1624	0.11
ERIE	0.0297	0.1601	0.0406	0.0149	0.1079	0.2137
FAIRFIELD	0.0274	0.1728	0.0476	0.0098	0.1635	0.1324
FAYETTE	0.0279	0.1745	0.0214	0.0603	0.1662	0.1249
FRANKLIN	0.035	0.0726	0.0157	0.0588	0.1375	0.2003
FULTON	0.0356	0.1431	0.1482	0.0048	0.1743	0.095
GALLIA	0.0741	0.0294	0.0138	0.0962	0.1404	0.1928
GEAUGA	0.0249	0.2152	0.0422	0.014	0.1403	0.2116
GREENE	0.0269	0.1655	0.0182	0.0385	0.1496	0.1663
GUERNSEY	0.0341	0.1116	0.0157	0.0128	0.1265	0.2011
HAMILTON	0.0239	0.3099	0.024	0.0143	0.134	0.1941
HANCOCK	0.0465	0.0663	0.0803	0.0034	0.1812	0.0552
HARDIN	0.0292	0.1696	0.0321	0.0096	0.1748	0.1176
HARRISON	0.0295	0.097	0.0284	0.0205	0.0692	0.2072
HENRY	0.0442	0.031	0.1104	0.0066	0.1704	0.0966
HIGHLAND	0.0337	0.1278	0.0952	0.0075	0.1437	0.177
HOCKING	0.0344	0.096	0.0094	0.0431	0.0813	0.2385
HOLMES	0.0338	0.0844	0.141	0.0077	0.1614	0.1471
HURON	0.0385	0.0975	0.0196	0.0127	0.1365	0.1931
JACKSON	0.0347	0.1257	0.0909	0.0073	0.2129	0.0621
JEFFERSON	0.018	0.3058	0.0439	0.0229	0.0519	0.1918
KNOX	0.0284	0.1903	0.0747	0.0078	0.1683	0.1103
LAKE	0.0201	0.3922	0.0119	0.077	0.1077	0.3427
LAWRENCE	0.1066	0.0356	0.0154	0.0201	0.142	0.1608
LICKING	0.0305	0.0952	0.0165	0.0267	0.1457	0.18
LOGAN	0.0543	0.0338	0.0216	0.035	0.161	0.1042
LORAIN	0.0219	0.3007	0.0228	0.0186	0.0688	0.2756
LUCAS	0.024	0.2963	0.02	0.0161	0.0859	0.2792

Table 25: Ecological Crossover Voting Estimates, Ohio 1992 and 1994

Estimated Percent of Crossover Voting

County	1992 Senate		1994 Senate		1992 Governor	
	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.
MADISON	0.0315	0.1445	0.0193	0.0182	0.1679	0.1044
MAHONING	0.0198	0.1843	0.0387	0.0221	0.0283	0.2367
MARION	0.0298	0.1585	0.0161	0.0368	0.1383	0.1937
MEDIAN	0.0247	0.2533	0.0282	0.0149	0.1322	0.2015
MEIGS	0.0548	0.0252	0.0449	0.0094	0.1685	0.1078
MERCER	0.0252	0.284	0.014	0.067	0.0955	0.2513
MIAMI	0.0398	0.0962	0.0267	0.0094	0.1604	0.1358
MONROE	0.0201	0.2	0.0308	0.0256	0.0265	0.2859
MONTGOMERY	0.028	0.1448	0.0134	0.0963	0.1107	0.2928
MORGAN	0.0486	0.0503	0.0737	0.0064	0.1721	0.1097
MORROW	0.0356	0.0992	0.0153	0.0158	0.1419	0.2003
MUSKINGUM	0.0279	0.144	0.0068	0.7705	0.1518	0.1398
NOBLE	0.0307	0.1432	0.0839	0.0101	0.1362	0.176
OTTAWA	0.0366	0.0615	0.009	0.1473	0.0788	0.3218
PAULDING	0.1123	0.0333	0.0171	0.011	0.1225	0.203
PERRY	0.0248	0.2427	0.1208	0.0118	0.1588	0.1429
PICKAWAY	0.0269	0.2201	0.0143	0.0723	0.1341	0.2059
PIKE	0.0267	0.1639	0.0297	0.0196	0.0907	0.1729
PORTAGE	0.0269	0.1924	0.022	0.0231	0.0669	0.2479
PREBLE	0.0496	0.0629	0.0698	0.0059	0.1677	0.1086
PUTNAM	0.0215	0.2053	0.0143	0.0221	0.1064	0.2317
RICHLAND	0.026	0.1896	0.0145	0.022	0.1306	0.2105
ROSS	0.03	0.1113	0.0813	0.0114	0.1301	0.2076
SANDUSKY	0.0392	0.0777	0.0554	0.0105	0.147	0.1675
SCIOTO	0.023	0.1903	0.0175	0.0155	0.097	0.2158
SENECA	0.0483	0.0597	0.0184	0.0462	0.1229	0.283
SHELBY	0.025	0.2052	0.0115	0.0359	0.1184	0.2242
STARK	0.0343	0.1219	0.0162	0.0155	0.1394	0.1423
SUMMIT	0.0227	0.3206	0.0147	0.0237	0.0692	0.2802
TRUMBULL	0.0181	0.272	0.0088	0.0231	0.0336	0.2887
TUSCARAWAS	0.0181	0.5029	0.0391	0.0179	0.0638	0.1691
UNION	0.0461	0.0739	0.0226	0.0231	0.1725	0.1114
VAN WERT	0.044	0.0698	0.0494	0.0098	0.1684	0.0978
VINTON	0.0367	0.0796	0.0142	0.0325	0.1327	0.2024
WARREN	0.0328	0.1346	0.0165	0.0281	0.1701	0.1116
WASHINGTON	0.2419	0.0255	0.0165	0.0721	0.148	0.1682
WAYNE	0.0263	0.226	0.0471	0.009	0.1547	0.1703
WILLIAMS	0.2045	0.0184	0.0226	0.0218	0.1633	0.118
WOOD	0.045	0.0564	0.0146	0.0277	0.1392	0.1872
WYANDOT	0.046	0.1074	0.0286	0.0082	0.1564	0.1585

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