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Authors

Cohen, Jonathan M.
Sides, John M.

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Jonathan M. Cohen and John M. Sides
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**The Incidence and Importance of Crossover Voting in a Blanket Primary:
Washington State Senate Elections 1986–1996**

Jonathan M. Cohen and John M. Sides
Department of Political Science
210 Barrows Hall
University of California, Berkeley
Berkeley, CA 94720
jcohen@socrates.berkeley.edu; jsides@uclink4.berkeley.edu

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Introduction

California voters who make it to the polls for the June primaries are in for a new experience. Instead of finding booths marked “Democrats,” “Republicans,” and “Other,” no partisan signs will direct traffic. This superficial difference hints at a more fundamental change that waits behind the curtains. Traditionally, only registered Democrats, for example, could go into Democratic booths, and once there they could choose only among Democratic nominees for office. Under the new primary election procedures adopted through the recent passage of Proposition 198, the so-called “Open Primary Initiative,” registered Democrats will be given the same ballot as every other eligible voter who turns out. This new ballot will list all of the candidates for office, regardless of their party affiliation. While still limited to choosing one candidate for each race, the voter can pick any party’s candidate for any office, mixing and matching as she pleases – for example, a Republican for Governor, a Democrat for Lieutenant Governor, a Libertarian for Attorney General, and so on down the ballot. The top vote-getters in each party then become the nominees for the general election.

Unquestionably, this new mechanism, most commonly known as a blanket primary, provides voters with a “costless” way to identify and even register with one party but participate in the nomination process of another. This voting out-of-line with partisan preferences is known as crossover voting, and can happen in any type of primary process.¹ However, in all other primary systems the choice to vote for a candidate of one party in one race precludes the

¹ Crossover voting is possible even in traditionally closed primaries, like California’s before Proposition 198, given the practically non-existent party membership requirements in the United States. One only needed to register as a member of the opposing party 30 days prior to the primary election.

possibility of voting for *any* candidate of another party for *any* other office. Since the blanket primary provides a way to cross over without giving up the ability to vote in accord with one's partisan preferences for the entire ballot, many expect crossover voting to increase under the new arrangements.

Some, such as political parties and the academic adherents to "responsible parties" (e.g., Schattschneider 1942; Ranney 1954), fear that there will be negative systemic consequences when voters who identify with one party can influence the outcome of another party's nomination process. After all, the selection of candidates constitutes the "basic activity" of political party organizations (Key 1964). Aldrich (1980) presents the idea more starkly: "If the party cannot control [candidate selection], its most crucial function, then it has little reason to exist." Fearing this loss of intra-party coherency, all of California's political parties sued to prevent the implementation of the Open Primary Initiative. The parties argued that the blanket primary constitutes an infringement of their freedom of association, while proponents argued that the state's interest in increased turnout and candidate representativeness outweighed the minimal, and unproved, "harms" to the parties' constitutional rights. In November 1997, Federal Judge David Levi of the Eastern District of California found for the defendants, holding, in part, that threats to the parties' associational claims are not subject to "strict scrutiny."

Before lamenting the demise of the party system, one should understand the incidence and the importance of crossover voting in blanket primaries. Whether crossover voting affects party control of the nomination process is an empirical question. Is the amount of crossover voting high enough to produce what the Second Circuit calls "fraudulent" nominees, those whose "candidacy [is] determined by the votes of non-party members?" (*Rosario v. Rockefeller*, 458

F.2d 649, 652 (2nd Cir. 1972), *affd.* 410 U.S. 752 (1973)). Despite the importance of this issue to the party system, interest in crossover voting has always outstripped research on the subject. In fact, as Lengle points out, “the real effects of opening up one’s nomination process to the followers of the opposition party still remain somewhat of a mystery” (1981: 99). This is especially true with regard to crossover voting in blanket systems.

Crossover voting is relatively understudied for several reasons. First, there are two types of crossover voting, and they are not equally objectionable even to strong party advocates (see Cain 1997 for the most recent discussion). There is “shopping,” where voters cross over to vote for a candidate in another party because they prefer that candidate to anyone running in their own party’s primary. There is also, however, the more pernicious “raiding,” where voters cross over to stick another party with a weak candidate in the general election and thus increase their own party’s chances of victory.² Since most of the scholars who study crossover voting find that shopping is more prevalent than raiding (e.g., Hedlund and Hedge 1982; Hedlund and Watts 1986), many people believe that crossover voting is acceptable from a democratic theory perspective. After all, our electoral system works well despite allowing crossover voting in general elections, so why not allow it in primary elections? A second reason that crossover voting in blanket primary states has been understudied is that the three states with blanket

² Cain has a more updated conceptualization of the types of crossover voting that has three categories: “sincere crossover” and two forms of “strategic crossover.” While the sincere variant mimics the “shopping” term used in this paper, the strategic components separate different forms of behavior that are subsumed by “raiding.” First, there is strategic crossover as described above as raiding. But, there is also strategic “satisficing,” in which a voter crosses over to vote for the most preferred candidate in the other party, but still most prefers a candidate in her own party. No matter which candidate wins in the general election, the voter will be satisfied. Though this more differentiated typology of crossover voting may ultimately prove more accurate, in this paper we stick with Cain’s published explication of crossover voting.

primary experience, Alaska, Louisiana, and Washington, are not generally seen as critical to national politics.³

The third and perhaps most fundamental reason for the neglect of crossover voting is that researchers typically depend on the availability of survey data. While scholars have different ways of identifying crossover voters (see Wekkin 1986 for a review), they all suggest that crossover voting be measured as the number of voters who state on exit-polls and other post-election surveys that they voted against their partisan preferences. The problem with this method is that such data exist only for the biggest races (e.g., President, U.S. Senate) and often only in the biggest states. But, crossover voting is also an issue in down-ballot contests and in smaller constituencies where surveys are spotty or non-existent. In fact, it is in these races, state legislative races for example, where crossover voting is thought to have its greatest impact (Cain 1997).

These proposed reasons for the absence of a large extant literature on crossover voting should no longer limit current study. From the perspective of responsible party advocates, and the Supreme Court (e.g., *Rosario* and *Republican Party of Connecticut v. Tashjian*, 479 U.S. 208 (1986))⁴, the intent of crossover voters is irrelevant. Crossover voting, whether of the shopping or raiding variety, is a problem whenever it results in: (1) more non-party identifiers than identifiers participating in a given party's election; or (2) crossover voting's changing the outcome of an election (Cain 1997 calls both ideas "swamping"). Such a condition leads not only to "fraudulent" candidates, but also to real, not hypothetical, harm to parties' freedom of

³ One crude indicator of this is that together these states send only 17 of the 435 Representatives to Congress.

⁴ In *Tashjian*, the Court held that crossover voting affects the integrity of the electoral process (1986: 219).

association rights. Second, California's adoption of the blanket primary and the state's unquestionable centrality to national politics makes understanding the effects of blanket primaries critical. Third, as Alvarez and Nagler (1997) show in their expert testimony for the Proposition 198 trial, crossover voting can be studied with aggregate election data using King's (1997) new ecological inference procedure. In light of these new developments, it is both possible and momentous to ascertain the incidence and importance of crossover voting.

The Alvarez and Nagler Testimony

Alvarez and Nagler provide an important first step in the process of developing a fuller understanding of the magnitude of crossover voting than previous studies, almost all of which focus on presidential races and employ survey data. Alvarez and Nagler study state-wide races in Washington State using county-level election returns to derive estimates of the number of crossover voters.⁵ "In general," they conclude, "we found in the ecological estimates that crossover voting averaged 12 [percent] for the thirteen races we examined" (35).

Unfortunately, simply stating that crossover voting averaged X percent is meaningless except in political context: even one percent is meaningful if it changes the results of an election! Alvarez and Nagler's own data indicate that this could have been the case in 1996. They estimate the average Democratic crossover vote in the 1996 Washington gubernatorial election to be 19 percent. While this number is reported as a "county average," and therefore difficult to

⁵ Studying crossover voting in Louisiana to get a sense of the likely effects of the blanket primary in California is inappropriate because Louisiana employs an inexact variant, better labeled a "non-partisan" primary. While Alaska's primary is technically similar to California's, its off-and-on use of the blanket primary and its atypicality among American states make generalizations difficult. Washington State is thus the most appropriate subject.

restate as an actual number of crossover voters, a conservative estimate is that 100,000 voters who traditionally vote Democratic voted in the Republican primary that year.⁶ Since the winning candidate in the Republican primary beat her closest opponent by only 23,000 votes, it is clear that Democrats could have changed the outcome of the race, and in some sense “controlled” the Republican nomination process. In other words, we contend that the phenomenon of crossover voting cannot be understood without reference to the specific strategic characteristics of the races in which it is determined to exist.

Another problem with the Alvarez and Nagler piece is that they examine state-wide races, such as those for Secretary of State, Commissioner of Public Lands, and Auditor, that are not consequential for understanding the effects of crossover voting on legislators and legislatures, and therefore political parties. Because Alvarez and Nagler ignore potentially more important down-ballot races and do not put their estimates in political context, their study leaves us with as many lingering questions as answers. This study attempts to address these concerns in order to provide a more complete description of where and how much crossover voting takes place, and demonstrate the political impact of crossover voting in Washington State.

Data and Method

⁶ We calculate this conservative estimate based on 1,212,935 voters for candidates of one of the two major parties, including 631,217 for Democratic candidates and 581,718 for the Republican candidates. These numbers, combined with Alvarez and Nagler’s estimated Democratic crossover (19 percent), make it reasonable to assume that there were at least 100,000 traditional Democrats who voted for Republican candidates in this election. More generically, one should note that the equation of vote choice and party identification in the case of Washington State aggregate data is both necessary and proper. See below for a larger discussion of this issue.

We estimate the incidence and importance of crossover voting by examining Washington State Senate elections, 1986–1996. State Senate races are precisely the kind of down-ballot contests where crossover voting could be consequential. They also better illuminate the effect of crossover voting on political parties. Using data over-time brings more information to bear and allows us to understand better the dynamics of crossover voting at this level. However, we were forced to split the data into two subsets – the 1986, 1988, and 1990 elections are grouped together, as are those in 1992, 1994, and 1996 – because legislative redistricting makes comparison across the full time period impossible. We exclude from our dataset primary elections that are uncontested by one of the two major parties (i.e., no Democrat OR no Republican candidate), because it is meaningless to talk about either the amount or the implication of crossover voting in elections that feature candidates from only one party.⁷

These data help us do four important things. First, we are able paint the most detailed picture of crossover voting possible. Second, these clear descriptives help us understand the strategic environments that encourage crossover voting. Third, we can build more researched hypotheses about the effects of crossover voting on legislators, legislatures, and political parties. Finally, with these results we can develop a baseline method for studying the actual effects of the blanket primary in California. To reach these ends, we build on the method that Alvarez and Nagler employ in their testimony.

⁷ This exclusion condition removes only 13 elections from consideration. The resulting dataset is comprised of 67 elections during 1986–1990, and 66 during 1992–1996.

As Alvarez and Nagler make clear, King's ecological inference (EI) model allows us to estimate the amount of crossover voting in Washington State using aggregate data. Figure 1 describes the nature of the ecological inference problem in this case.

[Figure 1 here]

Our task is to make inferences to the quantities of interest, the proportion of Democrats voting for Democratic candidates (β) and the proportion of Republicans voting for Republican candidates (β), using only the aggregate variables, the proportion of a district's voters that votes for Democratic candidates (V_i) and the proportion of a district's voters who identify with the Democratic Party (P_i). In other words, we must make inferences from the marginal quantities (the partisan breakdown of the district and the vote totals for the Democrat and Republican candidates) to the quantities in the four cells (the levels of party and crossover voting).

This requires only two kinds of data: primary election returns, which provide V_i and party composition figures, P_i . The former are easily available. The latter, unfortunately, are not. In Washington State, voters do not register by party. Therefore, estimating P_i is problematic. Alvarez and Nagler operationalize party composition by averaging primary election returns, by county, over all state-wide races in an election year.

This is a reasonable, though limited, operationalization of party composition. While our measure of partisanship mimics Alvarez and Nagler's by averaging across races, it improves on their measure in two important respects. First, it relies on general election returns instead of primary election returns. Second, it averages across years. Why is this an improvement? First, voting in general elections is a better gauge of baseline individual-level partisanship than voting in primary elections, since party identification is likely to be more salient when the contest is clearly

between members of opposing parties. In primary elections, the race most noticeable to voters is often between members of the same party, which will downplay the partisan aspects of the campaign.⁸ Second, adding an over-time aspect to our measure is an important part of any “normal vote” analysis. Only by considering multiple elections can we minimize the impact of anomalous elections on our partisanship measure.

We have constructed our measure of State Senate district-level partisanship as an average of party voting from the following elections:⁹

1. State Senate general elections for 1986–1990, 1992–1996.
2. State House general elections for 1986–1990, 1992–1996. Data are aggregated to State Senate district-level (in Washington State there are two State House districts per State Senate district).
3. U.S. Senate general elections for 1986, 1988, 1992, and 1994, disaggregated to State Senate district-level.
4. U.S. President general elections for 1996, disaggregated to State Senate district-level.¹⁰

While the central measure uses all of these data, we also run and report the results of EI using a partisanship measure that includes only the federal elections. As we see below, the results are similar with both measures, which is not particularly surprising given the fact that all the components (state and federal returns) of our measure correlate highly with one another, and in a factor analysis load heavily on one factor.¹¹ This indicates that the constituent parts of the

⁸ That said, in the races we examine, the average number of votes for Democratic State Senate candidates in primaries and general elections correlate highly (0.93 for 1986–1990; 0.93 for 1992–1996). So, while it does not appear that the choice of election matters when creating a baseline measure of partisanship, we use only general election data for two reasons: (1) the theoretical reasons listed above; and (2) because we combine results across races and want to include races that happen at the same time.

⁹All of these data are based on Washington State general election returns for 1986–1996, as provided by the Office of the Secretary of State.

¹⁰ Presidential returns for 1992 were also available, but Perot’s candidacy made the dynamics of that race sufficiently anomalous to warrant their exclusion from our measure.

¹¹ All of the measures have intercorrelations greater than 0.70. All variables have loadings above 0.91 in the one factor model, which accounts for 85 percent of the variance among the component parts of our measure.

measure gauge the same underlying dimension, which we label “baseline partisanship.” With this measure, we use EI¹² to estimate the amount of crossover voting that happens in State Senate districts in each election, 1986–1996.¹³

Before proceeding to the results, let us state the limits of this analysis. One limit is that our district partisan composition measure, like Alvarez and Nagler’s, assumes that no independents vote for Democratic or Republican candidates (we have, however, removed all votes for third party candidates from the analysis). By imposing party labels on those who vote for one of the two major parties, we are falling into the trap of subsuming party identification into vote choice (see Cain and Ferejohn 1981). Second, it is impossible to reveal the intent of individual crossover voters from the aggregate data. We will be unable to show whether the crossover that occurs is definitively shopping or raiding.

Finally, this research is limited by the robustness of the EI procedure itself. Like many statistical procedures, EI depends on the degree of variation in independent variable (baseline partisanship in this case) (King 1997: 285-6). The greater this variation, the more confident we can be in the results of EI. Unfortunately, the range of baseline partisanship in legislative districts is quite restricted. Figure B1 shows that most of the districts are clustered around a baseline partisanship of 50 percent Democratic. Indeed, this is what we would expect in most states in the absence of severe partisan gerrymandering. That we cannot be very confident in the

¹² Using Goodman’s regression (see Appendix A) with these data yields consistently nonsensical results, i.e., crossover voting rates less than zero percent.

¹³ We originally investigated Washington State House elections as well as the State Senate elections described here. Our baseline partisanship measure in this case was an over-time average only of State House primary and general election returns, since we could obtain no other State or Federal election returns broken down by State House district. Using EI, we obtained statistically significant crossover rates for both Democrats and Republicans. However, we believe that the lack of data with which to construct baseline partisanship precludes intensive analysis of the results.

point estimates of crossover voting obtained from EI is obviously a problem. However, the most intensive part of our analysis does not focus on the estimates themselves, but on the circumstances that give rise to crossover voting. This part of the analysis treats the estimates of crossover voting as dependent variables in various regression equations. This procedure can yield unbiased results because we can think of no reason why EI would produce estimates whose errors are systematically related to our independent variables.

Our analysis proceeds by examining four key components of crossover voting: (1) how much crossover voting occurs; (2) when crossover voting makes a difference; (3) what electoral circumstances lead to crossover voting; and (4) if crossover voting can be classified as shopping or raiding.

Results

The Incidence of Crossover Voting

[Table 1 here]

Table 1 presents state-level estimates of crossover voting, as generated by EI. The most striking result is the absolute magnitude of these results; crossover voting is much more prevalent in State Senate elections than Alvarez and Nagler estimated in state-wide contests. In any given election, between a quarter and a third of voters vote for a Senatorial candidate in the other party, compared with Alvarez and Nagler's estimate of 12 percent. These results are largely unaffected by the measure of baseline partisanship (federal or state *and* federal).

Although the size of standard errors cautions our interpretation, even a more conservative accounting points to the magnitude of crossover voting. Taking the lower bounds of the 50

percent confidence intervals as our point estimates, an average of 11.4 percent of Republicans and 13 percent of Democrats crossover in any given election (means for 1986–1996).¹⁴ Using these estimates, we find that crossover voting occurs in State Senate races about as frequently as Alvarez and Nagler find in state-wide elections.

Does Crossover Voting Make a Difference?

As mentioned previously, any estimate of crossover voting must be put in political context. To do so, we compare the estimated number of crossover voters in one party to the margin of victory in the other party's primary. Between 1986 and 1996, there were 17 Republican contests in which the number of Democratic crossover voters exceeded the number of votes by which the winning Republican candidate beat the closest opponent. During this time period there were also 12 Democratic races that could have been decided by Republican crossovers. This means that 29 out of 133 (22 percent) State Senate races had crossover voting rates that were potentially consequential, if not determinative of the election results.¹⁵ The validity of this simple "makes a difference" test is limited because it cannot demonstrate that the distribution of preferences among crossover voters differs from that of same-party voters, and therefore show that crossover voting did more than magnify results that would have occurred regardless of the crossover voters. However, from the standpoint of strong party advocates this

¹⁴ Though we report the standard errors in Table 1 for simplicity's sake, King cautions that standard errors may not always be the best measures of uncertainty and recommends confidence intervals instead (1997: 149). An even more conservative estimate, using the lower bound of the 95 percent confidence intervals as point estimates, shows average Democratic crossover as 10.5 percent and average Republican crossover as 9.3 percent.

¹⁵ Using the lower bound of the 50 percent confidence intervals as estimates reduces the number of races similarly affected to 18. Using the 95 percent confidence interval lowers the number to 14, which is still more than 10 percent of the races that we examine.

caveat is meaningless, and at the least the results are highly suggestive. Also, while average crossover voting is higher in these 29 contests (between 32 and 34 percent) than in the 133 races taken as a whole (between 28 and 29 percent), it is likely that crossover voting was consequential in other districts as well, as evidenced by the two-party distribution of crossover voters in senatorial elections.

The distribution of crossover voters in Washington State is notable. In 40 percent of the State Senate races we examine, one party's voters represent 70 percent of all those who cross over. In fact, the average two-party split of the crossover vote is 67 percent to 33 percent. "This unimodal distribution of crossovers," Wekkin posits, "can only enhance the capacity of crossover voting to substantially alter a candidate's share of the vote" (1986: 112). Moreover, this distribution indicates that crossover voting is not random, but systematically linked to the particular characteristics of campaigns. To investigate more closely this possibility we now explore specific hypotheses about the effects of specific electoral conditions.

The Electoral Preconditions of Crossover Voting

While there is a descriptive element to the findings presented above, by testing Cain's (1997) hypotheses about the likelihood and nature of crossover voting we can add flesh to our skeletal results. Cain theorizes that crossover voting in general is most likely to occur when two conditions hold: (1) a non-competitive primary for one party and (2) a competitive one for the other. Cain's theory is a variant of the simple Downsian notion that "*a person will be more likely to vote in primaries when the outcomes of these primaries are not a forgone conclusion*" (Jewell and Sigelman 1986: 446, original emphasis). With the EI estimates of district-level crossover

voting, we directly test Cain's hypothesis by regressing these estimates on the structural characteristics of the primary election contests.

Hypothesis 1. Crossover voting is more likely in situations that feature "asymmetric competition," where only one party has a competitive primary.

An uncompetitive race can be conceptualized (crudely) as an uncontested one. Similarly, a competitive race can be thought of as one with at least two candidates. Thus a simple measure of asymmetric competition is dichotomous, coded 1 if there is a competitive race in one party and an uncompetitive race in the other party, and 0 otherwise.

[Table 2 here]

Table 2 shows that in the bivariate case this measure of asymmetric competition has a significant effect on the amount of crossover voting that takes place in an election. Republican crossover voting is 15 percentage points more likely when there is a competitive Democratic contest and no competitive Republican contest than when this is not the case. Moreover, asymmetric competition has a "pull" as well as a "push" effect on party voters: Table 2 also shows that if a voter's party has the competitive contest, she is likely to stay and vote for a candidate of that party.

Despite the two-way effect of asymmetrical competition, the push effect seems to be stronger than the pull effect. In fact, when we use the more conservative crossover voting estimates based on the lower bound of the 50 percent confidence interval as the dependent variables, asymmetry in favor of the same party (pull) no longer meets standard levels of

statistical significance.¹⁶ These results provide evidence in favor of Cain's first hypothesis. Nevertheless, one should note that this simple model accounts for only a small amount of the variation (between 10 and 13 percent) in crossover voting.

At a minimum, these results suggest that if the incidence of crossover voting is related to asymmetric competition, we need a more sensitive measure of asymmetric competition than Cain's simple dichotomy. There is good reason to believe that all asymmetric situations are not equivalent. For example, a primary contest with one Democrat and two Republicans is arguably not as asymmetric as one with a Democrat and four Republicans. An even more sensitive measure than the number of candidates is the margin of victory. Having five Republicans running may not be all that competitive if one candidate walks away with 80 percent of the vote. Furthermore, any notion of competitiveness must account for incumbency, especially when the unit of analysis is state legislative contests.

While these three indicators – number of candidates, margin of victory, and incumbency – all gauge the competitiveness of primary elections, they imply different “calculations” that potential crossover voters could make. If a voter can assess the likely margin of victory, she can then determine the probability that one race will be closer than another. If she perceives asymmetric competition, then, according to Cain's hypothesis, she will more likely cross over, casting her vote where it will be most effective. Since few voters are so sophisticated (except in the most extreme cases where the relative margins of victory are great), most would only take account of the number of candidates running in each party, which would serve as a crude

¹⁶ For this and all other models, results from analysis using the lower bound estimates can be found in Appendix C.

signpost of relative competitiveness. Similarly, the presence of an incumbent in the primary indicates that a race may not be competitive, given the incumbent's likely advantage in name recognition, party support, etc. Because each of these variables contributes to our understanding of when and why primary elections will be competitive, they are essential to any model that attempts to understand the relationship between competition, asymmetrical or otherwise, and crossover voting. This leads us to a second hypothesis.

Hypothesis 2. As the expected relative competitiveness of the opposing party's primary increases, the incidence of crossover voting increases.

[Table 3 here]

Table 3 presents the results of the new model of crossover voting that conceptualizes asymmetric competition in these three ways. Clearly, asymmetry affects the likelihood that voters cross over. For every additional Republican candidate in a primary election, Democratic crossover increases by almost 5 percentage points and Republican crossover decreases by more than 7 percentage points, *ceteris paribus*. While the number of candidates from the two parties has a clear effect on crossover voting rates, the coefficient for electoral margin is small and statistically insignificant. There are two reasons why this might be the case. First, the premise behind the variable is that voters can judge the relative competitiveness of the primaries by the likely outcomes. This, as we suggest above, assumes too much voter sophistication, especially once we control for the number of candidates and incumbency. Second, the correlation between the number of candidates variable and the election

margin is high ($r = 0.80$), which is a preliminary indication that our data might not be sufficient to overcome the resulting multicollinearity.¹⁷

The third measure of competitiveness, incumbency, is actually a gauge of anti-competitiveness; races that feature incumbents are believed to be less competitive than open-seat contests. Therefore, incumbency in this model is best understood as a control with which to assess the validity and magnitude of the coefficients associated with the variables. For example, it takes two additional Republican candidates in a given race to offset the effect of a Democratic incumbent on crossover voting for both Democrats and Republicans. This means that competition as defined by the number of candidates in a race and the election margin must be great in order to affect crossover and party-line voting as much as incumbency does. Though the anti-competitive measure is primarily a control, the resulting coefficients for these variables are interesting in their own right.

Incumbency has a large, statistically significant effect. The presence of a Democratic incumbent in a primary election decreases the percentage of Democrats who cross over by almost 10 points, and increases Republican crossover more than 13 percentage points. Similarly, Democratic crossover increases by more than 9 percentage points and Republican crossover decreases by 5.5 percentage points when a Republican incumbent participates in the primary election. Interestingly, we again see push and pull factors of different magnitudes. While for Democrats a Democratic incumbent is as likely to discourage crossover voting as a Republican incumbent is to encourage it (-9.93 compared to 9.18), the pull of Republican incumbency has a

¹⁷ A more valid indication of multicollinearity is that regressing election margin on the other independent variables in the model yields an R^2 of 0.65, which is high enough (albeit barely) to be bothersome. Removing this variable does not change the results or the fit of the model, and it is included because of its theoretical significance.

significantly greater affect on Republican crossover voting than the push of a Democratic incumbent (13.11 compared with -5.55). This result *may* point to the relative strength of the political parties in Washington State.

In sum, these results indicate that asymmetric competition affects the likelihood that voters will cross over to vote for candidates of the other party. Moreover, the data suggest that it is the clear signposts – the relative number of candidates and the presence of incumbents – that cue voters about how competitive a primary is likely to be and not some more complex understanding of winning margins. Moreover, this simple model of competitiveness greatly improves on the dichotomous representation of asymmetric conditions that is explored above. These models account for roughly 50 percent of the variation in crossover voting rates among both parties, and the standard errors of the estimate are significantly lower than those from the earlier model.¹⁸

Crossover Voting: Shopping or Raiding?

Unfortunately, in the absence of individual-level data it is difficult to separate between the two main types of crossover voting, shopping and raiding. This issue, however, can also be investigated, even if not resolved.

¹⁸ N.B. All of the models that we present in this paper have much better fit when only one of the incumbent variables is included or incumbency is conceptualized as a scale (-1 = Democratic incumbent; 0 = no incumbent; 1 = Republican incumbent). We present results using the two dummy variables for incumbency because they are more straightforward than the scale, because the scale does not yield an obviously interval-level variable, and because the comparison of the two yields interesting findings. Also, even these fit measures may be attenuated (see Appendix B, p.34).

Cain (1997) predicts that raiding is most likely when two conditions are met: (1) there is asymmetric competition in the primary (the first hypothesis above); and (2) the general election is expected to be competitive. To test this hypothesis, we add a measure of general election competitiveness to our model. Our measure consists of the number of percentage points by which the winner of the general election beat her opponent. This is, of course, a measure of *actual* competitiveness in the general election, which is only a proxy, albeit a good one, for the *expected* competitiveness that we are trying to model.

[Table 4 here]

As Table 4 shows, the competitiveness of general elections does not seem to have much of an impact on crossover voting. The coefficient on general election competitiveness for Democratic crossover is small and statistically insignificant. For Republican crossover, general election competitiveness does have a statistically significant effect, but is quite modest. For every 5 percentage point decrease in the margin of general election victory, Republican crossover is estimated to decrease by just under 1 percent. Interestingly, when the lower bound estimates of crossover voting are used as dependent variables, the effect of general election competitiveness is greater (-0.24 for Democratic crossover and -0.34 for Republican crossover), and the coefficients achieve statistical significance ($p < 0.001$) for *both* parties. The size and sign of the coefficients indicate competitiveness in November tempers crossover voting, if it affects it at all. From this it is reasonable to either reject Cain's hypothesis or conclude that shopping is

the most prevalent form of crossover voting that occurs in Washington State. The data that follow tend to support the latter conclusion.

Crossover voters who shop are those who find a preferred candidate in the other party and vote for her in the primary election. They are thus apt to stick with that person in the general election. Therefore, one simple way to assess the motivation of crossover voters is to see if they continue to cross over in the general election. One measure of this is whether crossover voting favors the party that wins the general election. This is, of course, yet another imperfect measure, but it yields an interesting result.

[Table 5 here]

Table 5 shows Democratic crossover voting in primaries is positively related to Republican general election victory margins. Increasing Republican general election returns, on the other hand, reduces the amount of Republican crossover, *ceteris paribus*. Note that both incumbency variables lose much of their substantive and statistical significance in this model, since the Republican general election variable is highly correlated with these variables.¹⁹ Nevertheless, these results indicate that, in the aggregate, the pattern of crossover voting tends to confirm that it is mainly of the shopping variety.

Conclusion

¹⁹ The correlation between the general election variable and Democratic Incumbent is -.61. The correlation between this variable and Republican Incumbent is .63.

We find that crossover voting in Washington State Senate races is of notable magnitude and likely has more-than-occasional importance in determining election outcomes. Our regression results are significant and robust: crossover voting is significantly related both to asymmetric competition and incumbency, though less so to the margin of victory in the general election. In particular, the measure of asymmetric competition that compares the number of candidates running in each party's primary has a significant effect, a fact consonant with how we expect voters might calculate whether to cross over. The last piece of analysis suggests that most crossover voting can be classified as "shopping."

However, we view these results as just a first cut in the absence of better aggregate data and *any* individual-level information. When we turn our sights to the study of crossover voting in California in 1998 and beyond (should Judge Levi's ruling stand), our research will not be so limited.

For the California elections more and better data will be available with which to study the dynamics of crossover voting. California still maintains voter rolls that list partisan status. These registration data will provide an important lens on partisanship unavailable in Washington. Moreover, this information along with election returns will be available at the precinct-level. This means that district-level estimates will be sturdier than those in the Washington study, which EI calculates through a simulation process (as discussed in Appendix B).

In addition to an improved measure of partisanship, the motivation behind crossover voting can be tested more directly in California than in Washington for two reasons. First, the more differentiated returns and better party identification measures will increase the amount of detail that we can glean from the aggregate data. Second, while polling at the legislative district-

level in California is rare, surveys are much more common in California than in Washington. For example, the Field Institute's California Poll has been trying to track the incidence of crossover voting and the demographic characteristics of crossover voters since last October.

The advantages we will have when studying California elections are not, however, limited to improved data. We believe that the method that we employ here to tease out the type and substantive significance of crossover voting is a baseline from which the dynamics of California's new primary election system can be fruitfully explored.

Figure 1. Basic Ecological Inference Notation.

		Voting Decision		
		Democrat	Republican	
Party ID of Voter	Democrat	β	$1-\beta$	P_i
	Republican	$1-\beta$	β	$1-P_i$
		V_i	$1-V_i$	

in the i th district:

- V_i Proportion of population voting for the Democratic candidate
- P_i Proportion of population with a Democratic party affiliation
- β Proportion of Democrats voting for the Democratic candidate
- β Proportion of Republicans voting for the Republican candidate

Table 1. Overall Estimates of Crossover Voting in Washington State Senate Primaries

Baseline Partisanship Measure	Proportion of Primary Voters that Crosses Over (standard error)			
	1986-1990		1992-1996	
	Democratic	Republican	Democratic	Republican
Federal Elections ¹	.28 (.20)	.32 (.20)	.31 (.21)	.25 (.23)
Federal and State Elections ²	.28 (.20)	.31 (.21)	.29 (.21)	.23 (.23)

1986-1990: n=67

1992-1996: n=66

For 1986-1990, federal election returns were an average of U.S. Senate returns from the 1986 and 1988 general elections. For 1992-1996, federal election returns were an average of U.S. Senate returns from the 1992 and 1996 general elections and Presidential returns from the 1996 general election.

² State election returns were an average of State Senate and State House returns from the general election. These were then averaged with the federal election returns as described above.

Table 2. Competition on Crossover Voting

Impact of Asymmetric

	Democrat Crossover	Democrat Crossover	Republican Crossover	Republican Crossover
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	Competitive Democratic/Noncompetitive Republican		-7.62*** (3.63)	15.05*** (3.85)	13.70*** (3.86)
	Competitive Republican/Noncompetitive Democratic	12.71*** (3.12)	11.60*** (3.12)		-6.87* (3.32)
	(Constant)	27.49*** (1.30)	28.60*** (1.38)	26.96*** (1.34)	28.31*** (1.47)
R ²	Adjusted	0.11	0.13	0.10	0.12
	S.E.E.	13.60	13.42	14.45	14.27

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

Table 3. Impact of Expected Asymmetric Competition on Crossover Voting

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	4.73** (1.54)	-7.13*** (1.68)
Election Margin (Republican – Democratic)	0.05 (0.04)	0.02 (0.04)
Democratic Incumbent	-9.93*** (2.35)	13.11*** (2.56)
Republican Incumbent	9.18*** (2.37)	-5.55* (2.59)
Constant	29.48*** (1.94)	25.93*** (2.11)
Adjusted R ²	0.51	0.49
S.E.E	10.01	10.92

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; ***p < 0.001.*

Table 4. Impact of Expected Asymmetric Competition and General Election Competitiveness on Crossover Voting

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	4.80** (1.58)	-6.10*** (1.66)
Election Margin (Republican – Democratic)	0.05 0.04	0.02 (0.04)
Democratic Incumbent	-9.98*** (2.37)	12.30*** (2.50)
Republican Incumbent	9.18*** (2.38)	-5.48* (2.51)
General Election Competitiveness	0.01 (0.05)	-0.18** (0.06)

Constant	30.45*** (4.92)	40.06*** (5.19)
Adjusted R ²	0.51	0.51
S.E.E.	10.05	10.60

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

Table 5. Crossover Voting as Shopping

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	3.90*** (1.58)	-3.80*** (0.91)
Democratic Incumbent	-2.83# (2.37)	6.87* (2.25)
Republican Incumbent	-0.48 (1.73)	1.22 (2.30)
General Election Competitiveness	-0.12** (0.39)	-0.01# (0.05)
Margin of Republican General Election Victory	0.41*** (0.03)	-0.31*** (0.04)
Constant	41.29*** (3.38)	32.45*** (4.52)
Adjusted R ²	0.78	0.65
S.E.E.	6.72	8.97

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; ***p < 0.001.*

Appendix A. King's Ecological Inference Solution.²⁰

Most previous studies of crossover voting rely on survey data. Using these data is, as always, problematic, but does facilitate the study of the incidence, importance, and motivation of crossover voting. Unfortunately, such individual-level data do not exist for Washington State. In their absence the analyst must rely on aggregate data and attempt to make inferences to the individual level, which is the crux of the famous ecological inference problem. However, a new work (King 1997) offers “a solution” to the ecological inference problem that purports to improve upon the existing analytical technique, Goodman's (1953) ecological regression.²¹

As discussed previously in the text, Figure 1 makes clear the nature of the ecological inference problem in this case. Our task is to make inferences to the quantities of interest, β and β , using only the aggregate variables, V_i and P_i . In other words, we must make inferences from the marginal quantities (the partisan breakdown of the district and the vote totals for the Democrat and Republican candidates) to the quantities in the four cells (the levels of same-party and crossover voting). Goodman's ecological regression attempts to do this by regressing V_i (the proportion of the population who voted for the Democratic candidate) on P_i (the proportion of Democratic Party identifiers) and $1 - P_i$ (the proportion of Republican Party identifiers), with no constant term. This generates the following “accounting identity,” to use King's term (1997: 38):

²⁰ For another brief review of King's method, see Fang Wang, 1997, “An Alternative Conjecture – Guide to King's *A Solution to the Ecological Inference Problem*,” *The Political Methodologist* 8, No.1: 21-26.

²¹ In relying on King's method, we give short shrift to other, less well-known strategies and methods for ecological inference that deserve attention (Achen and Shively 1995, Rivers and Tam 1997). Further elaboration of this project would draw upon these works and compare and contrast them to King's.

$$V_i = \beta (P_i) + (1-\beta)(1-P_i)$$

The coefficients from this regression, B^d (the proportion of Democrats voting for the Democratic candidates) and $1-B^d$ (the proportion of Republicans voting for Democratic candidates), are the overall estimate of crossover voting across all districts, not for the i^{th} district (hence B and not β , as well as the dropped subscript). The reason for this is that Goodman's technique assumes that the district-level parameters, β and β , are constant across all districts. In terms of this example, Goodman's regression assumes that the level of crossover voting is the *same* in every district.

Obviously, this assumption, known as the constancy assumption, seems specious. There is every reason to expect crossover voting to vary depending on the district, each of which might have a unique electoral context in any given election year. Nevertheless, the constancy assumption is necessary because the basic accounting identity is indeterminate: it has twice as many unknowns (two coefficients for each district) as observations (districts). King shows that, when the constancy assumption is violated, i.e., the parameters do vary over districts, and the parameters are correlated with P_i , ecological regression produces biased estimates. King terms this pathology *aggregation bias* because it is due, at fundamental level, to the loss of (individual-level) information that the aggregation process entails.²² Unfortunately, researchers rarely have the kind of information that would allow them to determine whether aggregation bias (a correlation between the parameters of interest and P_i) exists (King 1997: 46). Another problem with ecological regression is that it often produces nonsensical results, such as proportions

²² King also discusses another manifestation of aggregation bias, "the grouping problem," and shows that the grouping and indeterminacy problems are equivalent (53-54).

greater than 1 or less than 0. Indeed, these are two of many problems with the Goodman model (see King (1997), chapter 4, for an extensive list).

King’s method seeks to improve on Goodman’s ecological regression in several respects. King begins with the “method of bounds,” something that ecological regression ignores entirely. The method of bounds draws upon information from the marginal quantities to determine if the range of the cell entries in Figure 1 is less than the maximum 0-1 range. Consider this brief hypothetical example:

		Voting Decision		
Party ID of Voter		Democrat	Republican	
Democrat	?	?		25,000
Republican	?	?		33,000
	8,000	12,000		

Consider the top left-hand cell, which represents the number of Democrats voting for Democratic candidates. According to the row marginal, this cell could contain any number between 0 and 25,000. However, numbers in that wide range could exceed the column marginal (8,000), an obvious impossibility. The method of bounds takes into account this impossibility and narrows the range of the estimate accordingly. King asserts that the method of bounds almost always establishes a range for the cell entries that is less than 0-1, a significant gain in information for the researcher (79).

Given the information from the method of bounds, we can get a first cut at the data by looking at a *tomography plot* (see Figure A-1). The axes of the tomography plot correspond to

the quantities in the left-hand cells of Figure 1. The x-axis gives the proportion of Democrats voting for Democratic candidates. The y-axis gives the proportion of Republicans voting for Democratic candidates. Each line on the graph represents a district in Washington State. The tomography plot incorporates the information from the method of bounds at the points where these lines intersect the axes. For example, if a line intersects the x-axis at $\beta = 0.80$, then the proportion of Democrats who voted for Democratic candidates must fall somewhere between 0 and 0.8. Likewise, the other end of the line indicates the bounds on the proportion of Republicans who voted for Democratic candidates. The method of bounds and the tomography plot tell us that the *true* estimates of these quantities for a given district must lie somewhere on the line for that district.

Having calculated the bounds in this fashion, King goes on to build the full statistical model, which rests on three assumptions (93-94). First, the quantities of interest (β and β) are modeled as if they are generated by a truncated bivariate normal distribution. The truncation is due to the limitations of the unit square, since β and β must range between 0 and 1. Second, β and β are assumed to be “mean independent” of P_i , a weaker assumption than pure independence but equivalent to assuming a lack of aggregation bias. Finally, as in all previous research on the ecological inference problem, the values of V_i are assumed to be independent after conditioning on P_i .²³

The bivariate normal distribution is, geometrically speaking, a mountain. Essentially, these assumptions enable King, via maximum likelihood estimation, to locate this mountain on the

²³ King asserts that his model is robust to violations of all of these assumptions (see chapter 9). Rivers and Tam (1997) have criticized the first assumption in particular, though they admit that their alternative solution lacks some of King’s theoretical and analytical simplicity.

tomography plot. The pinnacle of the mountain, or the mode of the distribution, will be located over that part of the tomography plot from which the lines “emanate,” i.e., “the area with the greatest density of lines” (130).²⁴ The pinnacle provides the estimate of the overall quantities of interest. “Contours” drawn around the mountain represent 80 percent and 50 percent confidence intervals. Figure A-2 presents the same tomography plot as Figure A-1, except with the mode and contours superimposed. With this estimation completed, King’s model then uses simulation to estimate each β and β as well as the standard errors for these estimates (see his discussion in section 8.2, p. 145).

²⁴ Tam (1997a, 1997b) discusses in detail the vulnerability of King’s model to *multimodality*, a situation where the bivariate normal distributional assumption is clearly inappropriate. She also improves significantly on King’s model by elaborating a method by which one can determine the variables (“covariates” in King’s terminology) producing multiple modes. Fortunately, our data do not indicate multiple modes. As is evident in Figure 2, most of the lines on the tomography plot appear to emanate from the lower right hand corner. Compare this result to King’s Figure 9.7 (p. 187), which shows a bona fide example of multimodality.

Appendix B. Ecological Inference Diagnostics

As with any other statistical procedure, King's method for ecological inference requires some post-estimation diagnostics to evaluate the quality of the model estimated and to ferret out any pathology that may be present.

As with regression and various maximum likelihood models, the *fit* of the model is one crucial characteristic. EI produces no easily interpretable indicator of fit like R-squared or the percent correctly predicted. King advises using a plot like Figure B-1. On the x-axis is the Democratic Party composition of the district (P_i); on y-axis is the percent vote for the Democratic candidates in the district, (V_i). Each circle represents a State Senate district election that took place during 1992–1996. The circles are proportional in size to the number of voters who participated. Ideally, says King (1997: 286), the center line in this plot (the “expected value line”) should travel through the middle of most of these points, just like a regression line drawn through a scatterplot. Unfortunately, that is not the case. While the 80 percent confidence interval lines on either side of the regression line capture a good number of the data points, the slope of the expected value line appears too flat, given the shape of the data. In all the various estimations we ran – State House, State Senate, U.S. Congress – using all kinds of party composition measures, we never once generated a model that fit the data in the proscribed manner. We have no ready explanation for this. Further analysis could drop those cases that appear to be outliers of a sort (e.g., those circles at the bottom of the plot), and then re-run EI on the new, trimmed dataset.

One pathology, discussed earlier, is aggregation bias, which can be defined as a correlation between the parameters of interest and P_i . While Goodman's regression generates biased

estimates when aggregation bias is present, King promotes his model as more robust to this problem. Figure B-2 shows the presence of aggregation bias in the 1992–1996 data. Here, each line represents an election in a district. The endpoints of the line represent the bounds on the coefficient β , or the proportion of Democrats voting for Democratic candidates (the y-axis). The bias is evident in that, as the percent Democratic in the district increases, the bounds on this coefficient indicate greater and greater values of β . However, the model is at least somewhat robust to aggregation bias when there is heavy truncation of the bivariate normal distribution. We say “at least somewhat” because King’s position on this issue is not entirely clear. For example, “[i]f this kind of heavy truncation is present, then it is sometimes best to ignore aggregation bias and use the results from the basic ecological inference model” (287). The truncation is evident in Figure 3 where both the 50 percent and 80 percent maximum likelihood contours are chopped off by the edge of the unit square. Even if aggregation bias is present, King says that it should not invalidate the regression results obtained from using the crossover voting estimates as dependent variables (1997: 288).

In sum, we have mixed feelings about the effectiveness of EI in producing estimates of crossover voting in this case. Even if we are safe in ignoring aggregation bias, the fit of the model is less-than-stellar, a fact for which we have no explanation. However, while we lack complete confidence in the point estimates of crossover voting, particularly at the district level, we do feel that our analysis of the circumstances leading to crossover voting is valid. As discussed in the text, we can think of no reason why EI would produce systematically biased estimates of crossover, such that the regression results would be compromised. Since we expect only random error in the EI estimates (at least in relation to the independent variables that we

employ), the only effect of the error in the regression analyses will be to attenuate the adjusted R-squareds. Also, that our findings are robust whether our dependent variable is the point estimates or the estimate at the low end of the 50 percent confidence interval gives us some confidence.

As with any new statistical method, King's method for ecological inference should be looked upon with a critical eye. Scholars should do more than treat this "solution" as black box and discuss EI results as if they were handed down from the mountaintop. Hopefully, as different applications reveal limitations of the model, it can be improved.

Appendix C. Tables from text using lower bound of 50 percent confidence intervals as dependent variables.

Table C1. Impact of Asymmetric Competition on Crossover Voting

	Democrat ic Crossover	Democrat ic Crossover	Republican Crossover	Republica n Crossover
Competitive Democratic/ Noncompeti tive Republican		-2.43 (3.42)	16.82*** (3.97)	15.76*** (4.01)
Competitive Republican/ Noncompeti tive Democratic	13.83*** (2.89)	13.47*** (2.94)		-5.41 (3.46)
(Constant)	10.63*** (1.20)	10.99*** (1.30)	9.40*** (1.38)	10.46*** (1.52)
Adjusted R ²	0.14	0.14	0.11	0.12
S.E.E.	12.61	12.63	14.89	14.81

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

Table C2. Impact of Expected Asymmetric Competition on Crossover Voting

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	2.48 (1.69)	-8.15*** (1.87)
Election Margin (Republican – Democratic)	0.08# (0.05)	0.04 (0.05)
Democratic Incumbent	-8.92*** (2.58)	11.26*** (2.85)
Republican Incumbent	5.82* (2.61)	-5.53# (2.88)

Constant	13.60*** (2.13)	9.09*** (2.35)
Adjusted R ²	0.35	0.41
S.E.E	11.00	12.17

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

Table C3. Impact of Expected Asymmetric Competition and General Election Competitiveness on Crossover Voting

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	3.85* (1.64)	-6.20*** (1.73)
Election Margin (Republican – Democratic)	0.08* 0.04	0.04 (0.05)
Democratic Incumbent	-9.99*** (2.46)	9.73*** (2.60)
Republican Incumbent	5.91* (2.47)	-5.14* (2.61)
General Election Competitiveness	-0.23*** (0.06)	-0.34*** (0.06)
Constant	32.30*** (5.01)	35.79*** (5.40)
Adjusted R ²	0.41	0.51
S.E.E.	10.41	11.03

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

Table C4. Crossover Voting as Shopping

	Democratic Crossover	Republican Crossover
Number of Candidates (Republican – Democratic)	4.49*** (0.88)	-3.46*** (0.99)

Democratic Incumbent	-4.35* (2.18)	4.83* (2.46)	
Republican Incumbent	-2.22 (2.24)	0.66 (2.53)	
General Election Competitiveness	-0.32*** (0.05)	-0.26*** (0.06)	
Margin of Republican General Election Victory	0.33*** (0.04)	-0.27*** (0.05)	
Constant	41.34*** (4.37)	29.17*** (4.94)	
Adjusted R ²	0.59	0.61	
S.E.E.	8.69	9.82	

*Entries are OLS regression coefficients, with standard errors in parentheses. Dependent variable is the percent of crossover voting, coded 0-100. N = 133. *p < 0.05; **p < 0.01; *** p < 0.001.*

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