

## **EXHIBIT 8**

**IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ALABAMA  
SOUTHERN DIVISION**

EVAN MILLIGAN, et al.,

*Plaintiffs,*

vs.

WES ALLEN, et al.,

*Defendants.*

No. 2:21-cv-01530-AMM

**Rebuttal report of Baodong Liu, Ph.D.**

July 30, 2024

I have been asked to express my opinion on the expert reports of Drs. M.V. Hood III and Chris W. Bonneau to the extent they respond to my analysis or raise issues connected to those in my report. This report serves as a rebuttal to their expert reports.

This report summarizes the limitations of Dr. Hood's findings and examines Dr. Bonneau's flawed methodology, disproving his conclusions.

**The Limitations of Dr. Hood's Report**

Dr. Hood's report was written to answer five questions, three of which have nothing to do with the Alabama Congressional redistricting, and none of which I believe are relevant to addressing whether Black voters in Alabama have an opportunity to elect candidates of their choice to Congress. Rather than focusing on Alabama congressional districts, Dr. Hood conducted a cross-state analysis using parameters of his choosing. He compared, for example, the voting patterns of Black voters in 20 other states to that of Alabama. He did not provide any reason why he chose the states with at least a 10% Black population, even though Alabama's Black population share is one of the highest in the nation, with over 25% of the population identifying as Black. Dr. Hood's statistics from other states say nothing about the voting choices of Black and white voters in biracial Congressional elections in Alabama. But Dr. Hood concluded that "Black support for Democratic candidates across these jurisdictions could be characterized as being close to monolithic" (p. 6). Dr. Hood's Tables 1 and 2 purport to address Black voters' choices in states he arbitrarily chose, looking only at the Presidential and two statewide elections, while excluding white voters' choices in those same elections. He

also failed to consider the race of the candidates. This is in contrary to his own professional recommendation when it comes to empirical analysis of vote dilution claims. In Dr. Hood's published article, "From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses," the appropriate approach to an RPV analysis, according to Dr. Hood and his two co-authors, "must also consider the race/ethnicity of the candidates running for election. Of the elections available for analysis, the more relevant are those that feature a minority candidate from the racial/ethnic group suing the jurisdiction in question. For example, in a vote dilution suit brought by Latino voters, one would seek election contests featuring Hispanic candidates, while also keeping in mind the other criteria previously discussed" (Hood, Morrison and Bryan, 2017, p.546).<sup>1</sup> Using biracial elections in vote dilution litigation research is a widely held standard by experts. But Dr. Hood did not follow this long-standing practice he himself recommended in his publications, and did not conduct any racial polarization analysis whatsoever.

Dr. Hood's report also purports to analyze the existence or extent of racial bloc voting, but he did not perform any RPV analysis in reaching his conclusions. After a lengthy comparison of the 20 states with Alabama on non-RPV related topics, Dr. Hood mentioned one national election—the 2016 Republican presidential primary elections at the state level. According to his finding, Ben Carson, a prominent Black conservative candidate, received 10.24% of the votes cast in Alabama. But Dr. Hood did not perform any RPV analysis for Ben Carson in any of the state-level primary contests. My RPV analysis showed that Ben Carson received about 9% of the white vote in Alabama (see Liu's Rebuttal Report in the Milligan case dated December 20, 2021, p. 3) which certainly cannot be regarded as proof for white enthusiasm for a Black conservative candidate.

Dr. Hood also did not analyze any Alabama's Congressional elections in this report. Instead, he once again cited Kenneth Paschal from House District 73 as an "example of white voters electing a minority candidate." First, House District 73 in Shelby County is not one of the Congressional Districts in dispute, so it tells us nothing about how white voters have voted in relevant areas in this case. Second, Paschal won the Republican runoff election in 2021 with 51.1% votes cast, and defeated his white Democratic opponent in the Special General Election with 74.7% of the vote. Moreover, Dr. Hood's report contains no RPV analysis documenting the extent to which *white voters* voted for Paschal. As I showed in my earlier rebuttal report, turnout was extremely low (5.3%) in this primary: only 1.7% of the white voting-age population cast their vote.<sup>2</sup> This low-visibility primary is not instructive or representative, it says little about whether white voters in Alabama embrace Black Republican candidates. Moreover, Dr. Hood's own analysis of the 2021 Plan showed RPV (see pages 13 and 14 of Hood Report, Dec. 10, 2021) and his analysis of the 2023 Plan also showed RPV with Black-preferred-candidates losing every analyzed election (see pages 5 and 7 of stipulation, *Milligan*, No. 2:21-cv-01530, Doc. 251).

<sup>1</sup> M.V. Hood III, Peter A. Morrison, and Thomas M. Bryan. 2017. "From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses." *Social Science Quarterly* 99 (2): 536-552.

<sup>2</sup> As Dr. Hood indicated, Paschal faced no opposition in the 2022 general election. Thus, no RPV analysis can be performed for that election.

More recent elections in the relevant area offer more evidence of the white bloc voting defeating Black candidates even in Republican primaries. For example, in the 2024 Republican primary in Congressional District 2, eight candidates ran for office: four white candidates and four Black candidates. The four Black candidates finished 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> places after the election results were announced and together received only 6.2% of the total vote.<sup>3</sup> Furthermore, according to the voter file data, as many as 95.9% of the 2024 Republican primary participants in CD2 were non-Hispanic white voters while only 2.44% of the CD2 primary participants were Black. Clearly, the white electorate voted overwhelmingly against all four Black Republican candidates in the primary. Similarly, in the Republican primary for the 2024 Montgomery County Commission District 3, Justin Castanza, a white candidate, ran against Cedric Coley, a Black candidate. Castanza won the Republican nomination with 80.38% of the votes cast. Thus, any suggestion of widespread white willingness in Alabama to vote for Black Republican candidates has no empirical grounding, including the isolated example cited by Dr. Hood.

Finally, Dr. Hood's own research showed the significance of race in the South, in comparison with other possible factors that may contribute to the partisan differences of the Black and white voters in the South. Using the survey data from the 2012 Cooperative Congressional Study, Dr. Hood pointed out that "race, especially the Black-White dichotomy, is the largest dividing line between the Republican and Democratic Parties in the region. In fact, in terms of party identification race dwarfs the effects of religion and class."<sup>4</sup>

### **Response to Dr. Bonneau's Report**

Dr. Bonneau asserted that "The lack of success of African American candidates is not because of their race; rather, it is because they overwhelmingly run as members of the Democratic Party" (p.20). However, Dr. Bonneau also acknowledged that in Alabama no official record of party registration is available, and that this prevented him from directly analyzing how political parties affect voting. Furthermore, he conducted no ecological inference analysis to measure the extent to which Black voters voted for the Democratic candidates. Instead, he insisted that lack of information on party identification in Alabama can be overcome by studying straight-ticket voting. He compiled the Democratic and Republican straight-ticket vote shares in the State of Alabama in the 2018, 2020 and 2022 elections, and found that around two-thirds of the votes in these three Alabama elections were cast through straight-ticket voting. He concluded that "most voters are voting for a political party, not a candidate (or candidates)" (p.5).

His conclusion is flawed because it is not clear who are the "most voters" he was referring to. One naturally asks if two-thirds of Alabama voters voted straight tickets, what is the racial distribution of these voters? Dr. Bonneau's report does not answer that question. Dr. Bonneau does not explain whether he has any knowledge of these voters directly, nor the racial identities of these straight-ticket voters nor localities/precincts the voters resided in. His

<sup>3</sup> The white candidates are Albritton, Brewbaker, Dobson, and Harris, and the Black candidates are DuPriest, Gilberry, Shepperson, and Thomas.

<sup>4</sup> See, <https://www.degruyter.com/document/doi/10.1515/for-2016-0007/html>

assertion that because, at the aggregate level, two-thirds of Alabama voters voted straight tickets it must also be true that a subset (e.g., Black voters) tend to vote straight-ticket is a classic ecological fallacy. The data collected at the aggregate level cannot tell us anything about the patterns at the individual level nor about a subset group (e.g., Black voters), especially about how race may or may not affect individual or group voting. In fact, it could even be true that no Black voters has cast a straight-ticket vote in Alabama. At the very least, Dr. Bonneau cannot make any claim about disappearance of racial effect simply because of the existence of a certain degree of straight-ticket voting discovered at the aggregate level.

A careful read of Dr. Bonneau's Table 1 does show that the straight-ticket voting has been increasingly a Republican phenomenon. Between 2018 and 2022, the ratio of Republican straight-ticket voting increased from 38.4% to 45.6%. When it comes to Democratic straight-ticket voting, the ratio declined from 26.8% to 21.0%.

Dr. Bonneau attempted to use straight-ticket voting to suggest that political parties have replaced race as the determinant of vote choice. Dr. Bonneau ignores that political parties are dependent on voters sorting themselves in the first place, and often this sorting process is along the racial lines. In his influential book, *Unstable Majorities: Polarization, Party Sorting and Political Stalemate*, prominent political scientist Morris Fiorina pointed out the exact mistake committed by experts such as Drs. Bonneau, Hood because of their over-exaggeration of partisan patterns. To study whether voters use straight ticket voting or split-ticket voting, according to Fiorina, scholars need to analyze not only voters but also who are the candidates that are running in the elections examined (Fiorina, 2017, pp. 137-138).<sup>5</sup> Fiorina explained that "Obviously sorting produces partisan polarization... The problem with using the term 'partisan polarization' is that in common usage the modifier 'partisan' often gets omitted and then forgotten. Given that as much as 40 percent of the electorate claims not to be partisan, casual references to polarization exaggerate the divide in [partisan] public opinion" (pp. 47-48).

#### Dr. Bonneau's Methodological Flaws

Dr. Bonneau's empirical analyses were almost entirely based on his use of county-level data. Dr. Bonneau stated, on page 10 of his report, "I examined the 2022 elections to the Alabama House of Representatives using the same methods and techniques as I did for state supreme court elections, and I find similar results. Black Democrats who lost contested seats for the State House averaged 29.1% of the vote in the counties in which they ran, while white Democrats averaged 23.7%." He continued to point out his findings based on the same county-level data: "This is also true in the 2022 elections to the Alabama State Senate: Black Democrats who lost contested seats averaged 32.1% of the vote in the counties in which they ran, while white Democrats averaged 24.9%." He also showed several bivariate correlation results between Democratic vote support and percentage of registered voters who are Black by using the same county-level data (p.13).

<sup>5</sup> Fiorina, Morris P. (2017). *Unstable Majorities: Polarization, Party Sorting and Political Stalemate*. Hoover Institution Press.

The county-level analysis on which Dr. Bonneau made his overarching argument of party replacing race as the determinant of voting behavior shows clearly his unfamiliarity with racial literature, and more importantly, the rapid methodological development in political science in the last three decades to remedy the problem of ecological fallacy. Political scientists had used county-level data to infer how individual voters made decisions before the 1950s. For example, the influential work of V. O. Key in 1949 used county-level data for his Black Threat thesis which suggested that white hostility toward Blacks was a response to the level of Black presence in the counties in which these white voters lived.<sup>6</sup> The use of county-level data, however, received vigorous scientific scrutiny in the 1950s. William Robinson in a famous article demonstrated the danger of ecological fallacy where scholars used aggregate data (such as county-level data) to infer individual behavior.<sup>7</sup> The larger the geographic unit, the more danger of committing ecological fallacy because of, among others, the wrong assumption that individuals from a same group (e.g. Blacks) in the same aggregate behave the same way regardless of their neighborhoods. A county-level analysis cannot capture the nuances of the neighborhoods which voters lived in and affected certain voters' (e.g., Blacks') behaviors.

To remedy the problem of ecological fallacy, during the last three decades prominent political scientists such as Gary King of Harvard University have developed various tools such as EI technology to take into account the rich information of each precinct (or VTD in the Census data) in order to make valid scientific inference. By committing the same errors that more frequently happened in the 1940s, Dr. Bonneau clearly was not familiar with the literature and development on ecological inference and he continued to blindly use county level data to make overarching and wrong conclusions.

A county-level analysis also faces a small sample size problem, as the number of counties in a given area (e.g., 67 counties in Alabama), compared to the number of precincts or VTDs, is always limited, and sometimes too small to allow statistical inference. Furthermore, a county-level analysis can also cause "double dipping" problem. A quick check on Dr. Bonneau's own data shows his lack of attention to these serious problems of his county-level measurements and his use of bivariate analysis without any methodological remedies. For example, in the excel file named "AL countydata 00-22" provided by Dr. Bonneau, Madison County appeared twice (in row 64 and row 66). Any scientific study cannot have the same unit appearing twice in a single correlation or regression analysis just because a certain variable of interest (or dependent variable) has two values and the chosen independent variables keep completely the same values. In Dr. Bonneau's spreadsheet, Madison County appears twice because Madison County has both State Senate Districts 2 and 7 located in the same county. But to reach his conclusion by double counting Madison County in a bivariate regression or correlation analysis, Dr. Bonneau committed the vital error of auto-correlation. To include State Senate Districts 2 and 7 twice in his analysis, it is no longer a purely county-level analysis, because State Senate Districts 2 and 7 are different from the other entire counties included in his same analysis. In other words, his unit of analysis has a built-in conflict, sometimes as a county, other times as a

<sup>6</sup> Key, V. O. Jr. (1949). *Southern Politics in State and Nation*. New York: Alfred A. Knopf.

<sup>7</sup> Robinson, William S. (1950). "Ecological Correlation and the Behavior of Individuals." *American Sociological Review* 15: 351-7.



state senate district. This problem is a violation of the iron rule of scientific inference, i.e., “Fixing the unit of analysis! Compare apples to apples, not to oranges”!

The widely-known fact that county-level analysis may produce biased RPV (or partisan polarization) estimations has resulted in very few, if any, expert witness empirical investigations entirely based on county-level data. Gary King’s EI, adopted to analyze precinct-level data, is a standard method in voting rights litigations because of its advanced features to remedy the problem of ecological fallacy. Dr. Bonneau not only failed to conduct any RPV analysis by using this advanced and reliable tool, but also continued to use the old flawed method that was more popular in the 1940s.

### **Race or Party as the Cause for RPV?**

Dr. Bonneau’s response to my RPV analysis of Congressional elections in Alabama (an analysis he failed to conduct) was entirely based on his false claim that political party has replaced race as the sole determinant of racial polarization. In doing so, rather than citing the Supreme Court’s majority opinion on this case itself, Dr. Bonneau misquoted Justice Alito’s statement in *Alexander v. South Carolina State Conference of the NAACP* (2024) which was a racial gerrymandering case. Here, the Gingles’s three-prong test determines the empirical evidence needed to prove the Plaintiffs’ claim, and my analysis responds directly to the RPV requirement.

Moreover, Dr. Bonneau’s claim of partisan effect in Alabama was based on a rudimentary bivariate analysis. He uses bivariate correlations but does not explain why his variables are correlated in the first place. As the famous saying goes, “correlation doesn’t mean causation”. His bivariate regression analysis also failed to show any causal effect because he did not perform what social sciences called controlled comparisons. To do so, the scientist needs to at least control an additional variable, other than party, to show that partisan effect still holds. None of Dr. Bonneau’s tables holds party constant to test the effect of race, or holds race constant to test the effect of party.<sup>8</sup> In his deposition, Dr. Bonneau was asked whether he conducted any analysis to rule in or rule out “whether black voters or white voter support candidates because of their view on race-related issues”, his response was “No, I did not.” (Bonneau Dep Tr fullprint, p.75). He also admitted that “there’s no doubt that among those factors, race would be a factor for some of them” to identify with a certain political party (pp.74-75).

One way to test the relative effects of race, as opposed to party, is to analyze the elections where the party “cue” is taken away. In this regard, both Dr. Hood and Dr. Bonneau looked at the 2021 Republican primary in House District 73. A party primary does remove the effect of party as candidates of a primary are from the same political party. But as I explained above, the House District 73 Republican primary had extremely low turnout, even among partisan voters. Furthermore, the population of state house districts are very small (about 48,000

<sup>8</sup> For the importance of controlling variables to establish causal relationships in social science research, see, for example, Gerring, John. (2012). *Social Science Methodology: A Unified Framework*. 2<sup>nd</sup> edition. Cambridge University Press.

people) while the congressional districts are about 760,000 people. Dr. Bonneau also points to the Democratic House District 74 primary which included a Black candidate, Malcolm Calhoun, who lost to the white candidate, Phillip Ensler. I performed an ecological inference analysis and found that the Black turnout was as low as only 5% in that election whereas the white turnout was slightly higher at 7.1%. And other racial groups (i.e., neither Black nor white) turned out at only about 11%. Thus, that Democratic primary was not an election one can rely on to make valid inferences about RPV in specific congressional districts in the state.

Alabama, however, does allow researchers to analyze the effect of race from party through non-partisan mayoral runoff elections. Whoever wins the first two places in primary elections, regardless of party affiliation, enters into a runoff in these mayoral elections, if the primary results lead to no majority-vote winner in the first round.<sup>9</sup> Two such mayoral runoff elections took place recently in Montgomery. They are the 2019 and 2023 Montgomery Mayoral runoffs. Montgomery's population is around 200,000 people and every voter can participate in the mayoral race (not just partisans) which is a better indicator than a low turnout primary in a state house district with only about 48,000 people. As shown in Table 2 of my expert report, when the party "cue" is taken away and only the racial cue remains, people's votes align closely with their race. Black candidates received at least 87% of Black voters' votes and less than 30% of white voters' votes in these elections. Once again, it is race, rather than party, that drove the election outcomes in these runoff elections. It is worth noting that Dr. Hood's initial report filed on December 10, 2021 also showed RPV as shown in my expert report. In addition, my original report for this case showed that about 54% of the Black voters and only about 16.7% of the white voters voted for the Black candidate, James Averhart, in the 2020 CD1 Democratic primary.

In sum, I agree with Dr. Hood that it is important to look at primary elections because "the minority candidate of choice may differ in a Democratic primary as compared to a general election scenario where, as demonstrated, African Americans will support the Democratic nominee." (p. 14, Hood Report, Dec. 10, 2021). This is because "for districts where a minority group makes up a sizable share but less than a majority of the electorate, it may or may not be the case that the minority group is present in sufficient number to elect their candidate of choice in the Democratic Primary." (p. 14). I analyzed Congressional primary elections data, including exit poll data from relevant primaries. In every primary that I analyzed, I found that voting was racially polarized. This demonstrates, once again, that it is race, rather than party, that drove the election outcomes.

#### RPV Analysis for the 2014 CD1 Election

On page 15 of his report, Dr. Bonneau indicated three Congressional elections that were not included in my original RPV analyses: "the 2014 1<sup>st</sup> Congressional District race between Burton LeFlore (a Black candidate) and Bradley Byrne (a white candidate), the 2012 3rd Congressional District race between John Andrew Harris (a Black candidate) and Mike Rogers (a white candidate), and the 2012 5th Congressional District race between Charlie

<sup>9</sup> Running RPV analysis for the one-on-one primary runoff between a Black candidate and a white candidate produces statistically much more accurate and reliable estimates than running RPV for the initial primary among three or more candidates because two or more candidates from a same racial group in the initial primary may lead to the necessity of combining their votes in one EI operation of RPV analysis.



Holley (a Black candidate) and Mo Brooks (a white candidate).”

I have conducted the RPV analysis for the 2014 CD1 election which continued to show the racially polarized voting pattern. As shown LeFlore, the Black candidate, received more than 94% of the Black vote and less than 7% of the white vote.

**Table 1**  
**Analysis of Racially Polarized Voting in the 2014 CD1 General Election**

<b>Group</b>	<b>LeFlore</b>	<b>Byrne</b>	<b>All-others</b>
White	0.064 (0.053, 0.084)	0.929 (0.909, 0.940)	0.007 (0.006, 0.008)
Black	0.936 (0.916, 0.952)	0.049 (0.034, 0.068)	0.015 (0.012, 0.018)
Total	0.282	0.705	0.012

Congressional Districts 1 and 5 are outside of the relevant area. Black candidates (Harris and Holley) both lost to the white candidates (Brooks and Rogers). But I will add the RPV analysis results if I receive the data on these other elections mentioned by Dr. Bonneau.

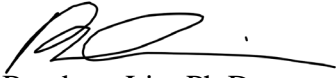
### Conclusions

Dr. Bonneau and Dr. Hood’s reports do not dispute my findings that RPV exists in the areas relevant in this lawsuit. The thesis of their reports is that the political parties were the sole or primary cause for the RPV found in my report. Dr. Hood only used univariate analysis by focusing on one variable at a time, and insisted incorrectly and with little support that RPV was not a result of racial differences between white and Black voters, but rather purely a consequence of partisan polarization. Neither conducted an RPV or partisan polarization analysis on their own.

Failing to analyze the effect of partisanship by controlling for race, Dr. Bonneau used statistics about straight ticket voting at the county level to conclude that race no longer drives Alabama politics, and parties are in total control of the political landscape in terms of election outcomes including RPV. After testing Dr. Bonneau’s thesis, this report demonstrates why race more than political party drives the RPV patterns that stubbornly endure in Alabama. Most importantly, this report shows the data errors and methodological flaws in Dr. Bonneau’s reliance on the county-level analysis to draw his invalid conclusions.

I declare under penalty under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on: July 30, 2024

A handwritten signature in black ink, appearing to be 'Baodong Liu', with a horizontal line extending from the end of the signature.

Baodong Liu, Ph.D.