

Exhibit A

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JULIE CONTRERAS, IRVIN FUENTES,
ABRAHAM MARTINEZ, IRENE PADILLA and
ROSE TORRES

Plaintiffs.

vs.

Case No.

ILLINOIS STATE BOARD OF ELECTIONS, 1:21-CV-3139
CHARLES W. SCHOLZ, IAN K. LINNABARY,
WILLIAM J. CADIGAN, LAURA K. DONAHUE,
WILLIAM R. HAINE, WILLIAM M. MCGUFFAGE,
KATHERINE S. O'BRIEN and CASANDRA B.
WATSON, in their official capacities as
members of the Illinois State Board of
Elections, DON HARMON, in his official
capacity as President of the Illinois
Senate and THE OFFICE OF THE PRESIDENT
OF THE ILLINOIS SENATE, EMANUEL
CHRISTOPHER WELCH, in his official
capacity as Speaker of the Illinois
House of Representatives, and the
OFFICE OF THE SPEAKER OF THE ILLINOIS
HOUSE OF REPRESENTATIVES,
Defendants.

DEPOSITION OF JACOB M. GRUMBACH, Ph.D.

Taken on behalf of the Defendants

December 2, 2021

Reported by:

Suzanne Benoist, RPR, CCR-MO, CCR-KS, CSR-IL, CSR-IA

JOB No. 4969979

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1 THE DEPOSITION OF WITNESS, JACOB M.
2 GRUMBACH, Ph.D., produced, sworn and examined on
3 December 2, 2021, between the hours of 8:00 in the
4 forenoon and 5:00 in the afternoon of that day via
5 Zoom, before Suzanne Benoist, a Certified Court
6 Reporter within and for the States of Missouri,
7 Kansas, Iowa and Illinois, in a certain cause now
8 pending In The United States District Court,
9 Northern District of Illinois, Eastern Division,
10 wherein JULIE CONTRERAS, et al. are Plaintiffs and
11 ILLINOIS STATE BOARD OF ELECTIONS, et al. are
12 Defendants.

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1 APPEARANCES

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4 official capacity as Minority Leader of
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1 IT IS HEREBY STIPULATED AND AGREED by and
2 between Counsel for the Plaintiff and Counsel for
3 the Defendant, that this deposition may be taken by
4 Suzanne Benoist, a Certified Court Reporter and
5 Notary Public, and thereafter transcribed into
6 typewriting, with the signature of the witness
7 being expressly reserved.

8 JACOB M. GRUMBACH, Ph.D.,
9 of lawful age, being produced, sworn and examined
10 on the part of the Defendants testified as follows:

11 EXAMINATION

12 QUESTIONS BY MR. KASPER:

13 (Whereupon, the deposition began at 9:05 a.m.)

14 Q. Could you state your name Doctor?

15 A. Yes, my name is Jacob Grumbach. Last
16 name G-R-U-M-B-A-C-H.

17 Q. If it's okay with you I'll just call
18 you Dr. Grumbach throughout the testimony.

19 A. That's fine. I'm okay with Jake or
20 Jacob as well.

21 Q. I notice from your CV you've been
22 deposed before, you've been through this process,
23 you understand the rules?

24 A. That's correct.

25 Q. You answer your questions verbally

1 rather than nodding or shrugging. I know you might
2 want to shrug off some of my questions but better
3 if you just speak out loud.

4 A. Sounds great.

5 Q. Why don't we start, do you have both
6 of your reports in front of you?

7 A. Yes. I have printed out clean copies
8 of the report and the rebuttal report.

9 Q. Okay. Great. Could we start with
10 table 2 on page 3 of your rebuttal report?

11 A. Rebuttal. Table B2 on page 3. Yes.

12 Q. B2 on page 3. Do you have that in
13 front of you?

14 A. I do.

15 Q. You state that you find racially
16 polarized voting I think because Candidate Andrade
17 received quote, significantly, close quote, greater
18 support from Latino voters than non-Latino voters,
19 right?

20 A. That is correct.

21 Q. But because Andrade received majority
22 vote from both groups, meaning Latinos and
23 non-Latinos, you also conclude that you did not
24 find, you found that non-Latino voters did not
25 engage in bloc voting, is that correct?

1 A. That is correct in this election
2 because non-Latinos voted in majorities on draw
3 day, non-Latinos did not engage in bloc voting
4 against the Latino candidate of choice.

5 Q. So you found that polarization was
6 present but bloc voting was not.

7 A. In this instance, that's correct.

8 Q. There's a difference between
9 polarization and bloc voting in your view?

10 A. That is correct.

11 Q. Can I turn your attention to table B1
12 on the same report? This involves the 2020 primary
13 election in House District 19, which again where
14 you find that the voting was racially polarized
15 because Candidate Vasquez received significantly
16 greater support from Latino voters than non-Latino
17 voters, right?

18 A. That is correct.

19 Q. You also conclude that non-Latino
20 voters in this election voted as a bloc against
21 Vasquez Bonnin I think is how you pronounce it,
22 B-O-N-N-I-N, is that correct?

23 A. That's correct. That the results
24 also show non-Latino voters voted as a bloc against
25 Vasquez Bonnin.

1 Q. And that's because I presume again
2 that your conclusions of non-Latinos voted against
3 or for someone other than Vasquez Bonnín.

4 A. That is correct, the majority of
5 non-Latinos voted against Vasquez Bonnín.

6 Q. And does the fact that Vasquez Bonnín
7 came in second in a three way race amongst the
8 Latino votes, in other words Vasquez got a greater
9 percentage of Latino votes than another non-Latino
10 candidate, right?

11 A. Would you repeat that question?

12 Q. Vasquez got a greater percentage of
13 non-Latino votes than a third non-Latino candidate,
14 right?

15 A. That is correct. Vasquez Bonnín
16 received a greater share of non-Latino votes than
17 did Joe Duplechin.

18 Q. But you still find bloc voting.

19 A. That is correct, because the majority
20 of non-Latinos voted for candidates other than
21 Vasquez Bonnín.

22 Q. Your report leaves out a third
23 conclusion that can be drawn from that election,
24 right?

25 A. Um --

1 Q. So it won't be a mystery. Do you
2 find that Latino voters voted cohesively in that
3 election?

4 A. I find that Latino voters did not
5 vote cohesively in that election.

6 Q. Why didn't you say so in your report?

7 A. I'm not sure. I'm happy to say here.

8 Q. Did you know it at the time and
9 knowingly dismissed that or did you just miss that?

10 A. I think it was an oversight, I'm
11 happy to say now that Latino voters do not vote
12 cohesively in that election because the majority of
13 Latino voters did not vote for the Latino candidate
14 of choice, Vasquez Bonnin.

15 Q. Okay. And again, an election could
16 have evidence of polarization and not bloc voting,
17 it could also have evidence of polarization but not
18 cohesion.

19 A. That is correct. Those are separate
20 concepts, racial polarization, cohesive voting and
21 bloc voting.

22 Q. Right. Okay.

23 All right, now let's turn your
24 attention to your first report, Figure 1 on page 8.

25 A. Okay.

1 Q. Which is the election, the first
2 entry is the election, the 2014 primary for House
3 District 4.

4 A. This is Figure 1 on page 8?

5 Q. Yes.

6 A. Is that correct? I believe that
7 first one is House District 4, primary 2016.

8 Q. I'm sorry, maybe that's a typo.

9 In that, in your graph it shows, it
10 appears to me that you indicate that Latino voters
11 voted about 95 percent in support of Latino
12 Candidate Soto?

13 A. I would have to check the appendix
14 table that has the precise number, but that number
15 seems reasonable given the plot here, yes.

16 Q. Okay. And it also seems to me about
17 70 percent of non-Latino voters supported her as
18 well?

19 A. Again, I would have to check the
20 appendix for the exact number but that seems like
21 an accurate estimate of that.

22 Q. So in reading that report, I'm
23 reading accurately that Candidate Soto was the
24 preferred candidate of both Latino and non-Latino
25 voters, correct?

1 A. That is correct.

2 Q. In fact it appears from that graph
3 that she won both votes pretty overwhelmingly.

4 A. Yes, I would say she won the majority
5 of the Latino and non-Latino voters in that
6 election.

7 Q. But nonetheless you find that race to
8 be polarized.

9 A. That is correct because racial
10 polarization is a separate concept that has to do
11 with the difference in support between racial and
12 ethnic groups, in this case of Latino and
13 non-Latino voters so that's a separate concept from
14 candidates of choice, majority support from various
15 ethnic groups, racially polarized voting is adopted
16 different in average support.

17 Q. So you find it's polarized because of
18 the delta between 95 percent roughly and 70 percent
19 roughly, right?

20 A. That's correct. And that we can
21 understand that difference as statistically
22 significant from conventional.

23 Q. If the difference were 90 percent to
24 70 percent, still polarized?

25 A. That would depend on the precision of

1 those estimates, the standard errors, confidence
2 intervals are based in credible intervals as well
3 as the magnitude of that district that you're
4 suggesting. So that's one part of being able to
5 tell the binary question of whether an election was
6 racially polarized is the actual numeric difference
7 in average support between these groups, but also
8 whether we can estimate those with enough precision
9 to say they're significantly different rather than,
10 you know, they appear different but we are least
11 statistically certain that they are different.

12 Q. Right. So if I understand this
13 correctly, to translate that into English or lawyer
14 speak it would mean if the difference in Latino
15 versus non-Latino support is greater than the
16 margin of error it's statistically significant,
17 correct?

18 A. That's very close I would say. I'd
19 like a bit sharper terms than that, but in general,
20 yes, sort of a, if the margins of error or
21 confidence intervals do not overlap between the
22 estimates of average support of Latino voters and
23 non-Latino voters then we can be highly
24 significantly confident that those averages are
25 indeed different.

1 Q. Right. And so the confidence
2 interval then of course depends on a lot of
3 different circumstances in your analysis, but the
4 smaller the confidence interval the more likely it
5 is that you'll find racially polarized voting,
6 right?

7 A. Right. So all else equal having a
8 narrower confidence interval or more precise
9 estimates of average voting patterns will make us
10 more likely to find statistically significant
11 racially polarized voting.

12 Q. So if 95 percent of Latino voters
13 supported Candidate Soto and 91 percent of
14 non-Latino voters supported the same candidate and
15 your confidence interval was three percent you'd
16 still find that racially polarized?

17 A. Well, not necessarily. If both
18 confidence intervals are three percent then, you
19 know, on the Latino and non-Latino estimates, then
20 those confidence intervals would overlap and
21 potentially mean a non-significant difference but
22 in a slightly different circumstance, let's say the
23 vote confidence intervals were slightly narrower in
24 that they did not overlap then that is true, even a
25 difference of I believe you said four percentage

1 points, 95 to 91 percent, you could find
2 statistically significant differences there if the
3 confidence intervals --

4 Q. So in other words in an election in
5 which nine out of 10 of Latino voters and nine out
6 of 10 non-Latino voters vote for the same candidate
7 it could still be racially polarized.

8 A. That is correct. Because racial
9 polarization or polarization in general has to do
10 with the difference between two conditional
11 averages or estimates of some sort and so that is a
12 binary question, yes or no, is there racially
13 polarized voting in this election, that's a
14 separate question to the magnitude of the
15 difference.

16 Q. Okay. But in your report you find
17 racial polarization or you find-non racial
18 polarization, so it's a binary question in your
19 report.

20 A. That's correct. In my report and in
21 general my focus it's been the question of yes or
22 no, is there racial polarization in a given
23 election or set of elections.

24 Q. So turning your attention to figure
25 3. This is Congressman Garcia's 2018 election.

1 A. I believe that's table 3 on --

2 Q. Table 3, I'm sorry.

3 A. No worries.

4 Actually is that table 1 on page 12?

5 Sorry.

6 If it's on page 12 of my report,

7 Exogenous Elections --

8 Q. Correct.

9 All right. So in that example there
10 you find that Congressman Garcia won about 93
11 percent of the Latino vote and 85 percent of the
12 non-Latino vote.

13 A. That's correct. My estimate is that
14 Jesus Garcia received 92.72 percent support from
15 the Latino electorate and 84.56 percent from the
16 non-Latino electorate in that election.

17 Q. Right. So he's a very popular guy
18 and you still find, I presume that you find racial
19 polarization in this election because the delta
20 between 93 percent and 85 percent is outside the
21 margin of error for your confidence level.

22 A. Again, I'd like slightly more sharp
23 terms on, you know, margin of error and statistical
24 significance, but the way I would put it is yes,
25 because those confidence intervals do not overlap

1 and those are at the low end of the Latino number
2 confidence interval is 92.08 percent and the upper
3 end of the non-Latino confidence interval is 85.28
4 percent, and for that reason we can say this is a
5 statistically significant difference between Latino
6 and non-Latino candidates.

7 Q. Okay. And you found that in a number
8 of elections in your report, where both groups vote
9 overwhelmingly for the same candidate you still
10 find there's polarization for the same reasons.

11 A. I would have to look through the
12 specific elections but again, the question of
13 whether yes or no there's racial polarization can
14 be a separate question from the intercept, so we're
15 talking about the delta, I appreciate you using
16 that term, the difference which in a statistical
17 model is the slope term, that's different from the
18 intercept, that overall sort of baseline level
19 support of all racial or ethnic groups or whether
20 groups vote in majorities for candidates those are
21 separate questions.

22 Q. Okay. And have you seen Dr.
23 Lichtman's report? I presume you have since you
24 mentioned it in your rebuttal.

25 A. I have.

1 Q. Do you have that in front of you?

2 A. I have it open on the computer, yes.

3 Q. Okay. Could you turn to table 2 on
4 page 38?

5 A. Sure thing.

6 I have a table 1 on page 38. This is
7 examples of Hispanic CVAP and challenged districts
8 under plan, under plan SD-927, is that correct?

9 Q. Yes.

10 No, I don't think so. I'm sorry,
11 let's skip that for a second and we'll come back to
12 that.

13 A. Okay.

14 Q. Can we go back to your initial
15 report?

16 A. Yes.

17 Q. On Figure 1 where we were talking
18 about.

19 A. Yes.

20 Q. And on page 8.

21 A. Correct. I'm there. Figure 1, EI
22 results by election north side.

23 Q. Yes. In each of those elections that
24 you reference here, beginning with HD 4 2016
25 primary election, that's the first one?

1 A. Yes.

2 Q. And then the bottom one is Senate
3 District 20, 2018, Iris Martinez?

4 A. That's right.

5 Q. Do you know who won each of those
6 elections?

7 A. Off the top of my head I do not know.

8 Q. Do you have any reason to believe
9 that seven out of 11 Latino candidates won those
10 elections? Do you have any reason to disagree with
11 that?

12 A. I would have to look. I imagine you
13 would know, so.

14 Q. You don't have any reason to think
15 I'm wrong.

16 A. I think that's fair.

17 Q. Would you be surprised to learn that
18 that was accurate? That wouldn't surprise you?

19 A. That would not surprise me,
20 especially, yeah, given these estimates of
21 electoral support that sounds plausible.

22 Q. In both of your papers you analyze
23 voting by Latino voters and non-Latino voters,
24 correct?

25 A. That's correct.

1 Q. So I assume that you're bunching
2 black, white, Asian and all other voters into this
3 category of non-Latino?

4 A. Yes, the category of non-Latino
5 includes Asian, black, non-Hispanic white and
6 Native American voters as well as other ethnoracial
7 groups as categories.

8 Q. Do you know if any of those groups,
9 whites, Asians, blacks, constitutes a majority in
10 any of the districts that you studied?

11 A. I did not investigate that in my
12 reports.

13 Q. But you could have determined that I
14 presume.

15 A. Yes, I could have determined what
16 share of districts were of various ethnoracial
17 groups, that's correct.

18 Q. Did anyone direct you to do that as
19 part of your research?

20 A. No. I, in answering the question of
21 assessing racially polarized voting and the
22 capacity of Latinos to be electoral represented in
23 these districts I looked at the percent Latino of
24 the citizen voting age public in the district.

25 Q. Did anyone direct you not to break

1 down the other group by racial category?

2 A. No. The relevant question in my mind
3 was the position for racial polarization for
4 Latinos and non-Latinos given the focus on Latino
5 candidates of choice and Latino candidates in these
6 elections.

7 Q. Okay. So if I understand this
8 correctly because you group everyone else into the
9 other category it's mathematically possible, isn't
10 it, that every white voter in a district could have
11 voted for the same candidate as the vast majority
12 of Latino voters and that candidate could still
13 lose because blacks and Asians voted a bloc against
14 that candidate.

15 A. Can I ask, did you say that it's
16 possible that every white voter in these elections
17 voted for the Latino candidate of choice in the
18 other ethnic groups?

19 Q. Sure.

20 A. I would say it's extremely unlikely
21 and I would have to check if it's even
22 mathematically possible given district and
23 registered voter demographics of these different
24 groups, I actually can not determine if that's
25 mathematically possible but it's of course highly

1 unlikely.

2 Q. But it's certainly possible that the
3 majority of whites and the majority of Latinos
4 could share the same choice and that candidate
5 could still lose based on black and Asian bloc
6 voting, right?

7 A. I believe there could be some subset
8 of elections that I analyzed that that may be true.

9 Q. So page 5 of your initial report when
10 you talk about your EI process, your ecological
11 inference process?

12 A. Yes.

13 Q. It says that EI can help you
14 calculate bounce, that's the term that you used,
15 which you call a range in which a true percentage
16 of, and I think I'm quoting this accurate, Hispanic
17 or non-Hispanic white voters who voted for a
18 particular candidate, right? That's what EI can
19 help you determine?

20 A. So to clarify the method of bound --

21 Q. Could you answer the question?
22 That's what it says, right?

23 A. It says here, yeah, I'll read this
24 line.

25 With this information researchers can

1 use EI to calculate bounds or range in which the
2 true percentage of Hispanic or non-Hispanic white
3 voters who voted for a particular candidate.

4 Q. Okay. But you didn't do that.

5 A. I did not look at Hispanic versus
6 non-Hispanic white. I looked at Hispanic versus
7 non-Hispanic voters in this report.

8 Q. Why didn't you use the methodology
9 you described on page 5?

10 A. I believe I was referring in general
11 that it is possible to estimate, you know, various
12 racial groups, electoral support for candidates.
13 Not that I was actually going to look at Hispanics
14 versus non-Hispanic white specifically.

15 Q. Okay. All right. Do you know, did
16 you see Dr. Lichtman's statement in his report that
17 each of the districts you looked at were
18 objectively minority districts?

19 A. May I ask where that is in the
20 report?

21 Q. I'll have to dig that up but do you
22 recall seeing that, or reading that?

23 A. Not that every district I analyzed
24 was majority minority, I'm not sure I saw that in
25 the report, I would have to find the place.

1 Q. All right. Could we go back to your
2 rebuttal report?

3 A. Sure thing.

4 Q. On page 4? I think it's the first
5 paragraph.

6 A. Yes.

7 Q. You address Lichtman's conclusion
8 that Latino preferred candidates won 21 of 23
9 elections for a win rate of 91 percent. Yeah?

10 A. I do.

11 Q. And then you go on to explain why you
12 think some of those could be discounted, but you
13 don't take exception to that mathematic, right?
14 You agree that the Latino preferred candidate won
15 21 of 23 of those elections?

16 A. Well, both, we use a different sample
17 of elections so that 23 elections I did not analyze
18 because there are differences in the choice that
19 elections as the sample to analyze both via I
20 believe Dr. Chen's report and Dr. Lichtman sort of
21 analyzes some elections that Dr. Chen has analyzed
22 that I did not and in addition there in Dr.
23 Lichtman's report I believe there's the exclusion
24 of an additional election, so we have this
25 difference in our sample so I'm not able to address

1 the claim of 91 percent in those 23 elections given
2 that I analyzed a separate set of elections.

3 Q. Okay. But you don't disagree with
4 the math, that 21 out of 23 is 91 percent.

5 A. I believe that.

6 Q. That's close enough?

7 A. That sounds great.

8 Q. Okay. But then you talk about, you
9 say that some of those wins should be discounted
10 because of special circumstances, right? And I'll
11 come back to the special circumstances. Then you
12 conclude by saying that the Latino preferred
13 candidate, this is at the end of that paragraph.

14 A. Yes.

15 Q. Prevailed in only one of five
16 endogenous elections and four of 12 exogenous
17 elections.

18 Do you see that?

19 A. That's correct.

20 Q. But you don't say which ones.

21 A. That's correct. In this report I
22 don't specifically say which ones, I do say which
23 endogenous election did feature a win by a Latino
24 candidate of choice in a non-majority Latino
25 district in which the Latino candidate of choice

1 was not an incumbent or appointed.

2 Q. Okay. Do you know which of the
3 others, which ones you believe the Latino
4 candidate, preferred candidate did not prevail?

5 A. I do not know off the top of my head.

6 Q. Okay. Could you provide that to us?

7 A. I can provide that, you know, after
8 this deposition.

9 Q. I'm sorry, we just got these reports.

10 A. Sure thing.

11 Q. I haven't had a chance to figure out
12 which ones we're talking about, so if you could let
13 me know that would be great.

14 A. Sounds good.

15 Q. In your rebuttal report I notice that
16 you didn't challenge any of the psychological
17 regression results that Dr. Lichtman provided in
18 his report, is that correct?

19 A. That's correct. I was not able to
20 assess the quality of the ecological regression
21 providers or results in this report.

22 Q. Okay. And you also made some
23 corrections like the tables that we talked about
24 earlier based on his report. Is that why you
25 included those corrections?

1 A. I did notice in Dr. Lichtman's report
2 that he pointed out potential issues with those two
3 election estimates so then I went back to those
4 elections and indeed found an issue with the data
5 formatting picked up by my statistical code that
6 required correction in this case, yes.

7 Q. So in the rebuttal report in your
8 summary paragraph 1 you say in this rebuttal report
9 I, one, correct minor statistical coding errors.

10 Those are the errors that you're
11 referring to that Dr. Lichtman found in your work?

12 A. That's correct.

13 Q. Okay.

14 A. Although I would say I'm not sure
15 that Dr. Lichtman found the coding errors but
16 rather pointed to potential implausibility of those
17 estimates.

18 Q. Right. And he was correct in that
19 regard.

20 A. He was correct that those earlier
21 estimates were implausible.

22 Q. Okay. I'll give you an example,
23 please go to page 54 of Dr. Lichtman's report up on
24 your screen.

25 A. Yes.

1 Q. Just for clarification, so the bottom
2 of the page says page 54, the top of the page says
3 page 55, or are we talking about chart number 2,
4 Hispanic and non-Hispanic coalition in the 19 state
5 legislative election analyzed by Dr. Grumbach in
6 table 3?

7 A. Let me see here.

8 Q. I believe this was the filing that
9 the designation changed by one.

10 A. Yes.

11 Q. That is table 6, and that appears on,
12 on my screen it's page 55.

13 A. I see. Yes. Thanks. Table 6,
14 revised compilation of 16 endogenous elections
15 examined by Dr. Grumbach.

16 Q. Right. Correct. Okay. So in that,
17 in your initial report you reported that, let me
18 turn your attention to number 13, entry number 13,
19 2020 Democratic primary for Andrade?

20 A. Right.

21 Q. That's an example where your initial
22 estimate for Latino voting strength of candidate
23 Andrade in the 2020 Democratic primary, House
24 District 40 was 32.9 percent. Correct?

25 A. I would have to look at my initial

1 report, I believe that's likely accurate.

2 Q. Okay. And now on your rebuttal
3 report, page 3 in table B2 you report for the same
4 election, the same candidate received 72.7 percent,
5 so roughly twice as much. More than twice as much.

6 A. If it's 39 then a bit below twice,
7 but.

8 Q. Correct. Sorry about that.

9 A. No worries.

10 Q. Roughly twice as much, right? So
11 your original estimate was off by 30 some points.

12 A. That's correct.

13 Q. Okay. And now it seems that Dr.
14 Lichtman's report is 70 percent and now your report
15 is 72 percent, so you are in agreement with Dr.
16 Lichtman about that estimate now, correct?

17 A. Yeah, I'm in reasonable agreement
18 with that estimate.

19 Q. Okay. In your report you talk about
20 the ecological regression. You're familiar with
21 that process?

22 A. I am.

23 Q. And like your methodology ecological
24 regression is based on by preaching election
25 returns and demographic data, is that correct?

1 A. That's correct.

2 Q. So could you have done duplicated
3 ecological regression?

4 A. May I ask you to clarify?

5 Q. You could have done an ecological
6 regression analysis as well, right, based on the
7 information that you had?

8 A. That's correct.

9 Q. But you did not do that is the
10 question.

11 A. I did not do that.

12 Q. I believe you could have replicated
13 what Dr. Lichtman did had you been asked to?

14 A. I'm not sure about replicated the
15 particular estimates but I could have done
16 ecological regression in addition to ecological
17 inference estimation.

18 Q. Okay. You indicated that one of the
19 differences between, one facet of your methodology
20 of ecological inference is it gives you precise
21 estimates of the votes for candidates of various
22 racial groups, right? You can estimate like you
23 did Latino voting in various areas, you do that on
24 a precinct by precinct basis, is that right?

25 A. Ecological inference techniques and

1 ecological regression use precinct level election
2 returns and support for each candidate at the
3 precinct level and precinct level demographics,
4 both methods use that.

5 Q. Did you also use a meta-analysis?
6 Can you explain that?

7 A. Sure thing. So I separately used
8 ecological inference techniques and combine all the
9 data into a single estimate, a meta-analysis, and
10 meta-analyses are commonly used across the social
11 and biomedical sciences to combine smaller studies
12 or smaller experiments into one larger sort of
13 global average estimate and in this case the
14 smaller experiments are each separate election, in
15 this case each endogenous election I analyzed to
16 create a summary estimate of overall Latino and
17 non-Latino support for the Latino candidates I
18 analyzed and their electoral components.

19 Q. Okay. So any errors in the smaller
20 elections would be reflected in the meta-analysis
21 as well, right?

22 A. That's correct. If there's an error
23 in this case two elections out of the 19 endogenous
24 elections I analyzed in the meta-analysis will be
25 affected in minor ways.

1 Q. I believe you didn't put an
2 additional meta-analysis in the report.

3 A. I did not. But I will say that the
4 errors that underestimated Latino support for the
5 Latino candidates of choice in those two coding
6 errors, if rectified those corrections should make
7 the meta-analysis estimates appear more racially
8 polarized, not less racially polarized.

9 Q. But the only meta-analysis you have
10 is admittedly inaccurate, at least in this case.

11 A. Well, there is always the potential
12 for minor forms of bias and impreciseness in
13 estimates, I would argue that that's highly likely
14 that any source of bias from these coding errors
15 given the 19 elections in this sample plus the fact
16 that I erroneously biased the estimate downward of
17 Latino support, that the conclusions would not
18 change of the results of the meta-analysis and that
19 the bias itself is of extremely small magnitude.

20 Q. Okay. But you're not certain because
21 you didn't do it.

22 A. I am certain that the overall
23 conclusion of substantial racial polarization and
24 the meta-analysis estimate would not change. I'm
25 100 percent certain of that.

1 Q. Okay.

2 A. I do agree that the point estimates
3 would change in minor ways.

4 Q. Okay. Could we go to table 4 which I
5 think is on page 47 of Dr. Lichtman's report?

6 A. Would you repeat the page number
7 please?

8 Q. 47.

9 A. Table 4, Divergences and EI Estimates
10 of Hispanic Voting Between EI Analysis of Dr.
11 Grumbach and Dr. Chen.

12 Q. Right. You had this when you
13 prepared your rebuttal report, correct?

14 A. I had Dr. Lichtman's report, that's
15 correct.

16 Q. Including this table.

17 A. Including this table.

18 Q. You did not address the conclusions
19 that he made in this report, correct? In this
20 table, in your rebuttal you didn't address this.

21 A. I did not reference this table in my
22 rebuttal report. That's correct.

23 Q. So I'm taking from that you have no
24 reason to believe it's inaccurate?

25 A. I would not draw conclusions either

1 way about it. I have not been able to receive
2 information about Dr. Chen's analysis such as, you
3 know, data files and code and things like that to
4 be able to assess the veracity of this table.

5 Q. Okay. I believe just taking a look
6 at it at face value, just the numbers on the page.

7 A. Uh-huh.

8 Q. For the House District 40 Democratic
9 primary election in 2014, candidate Pasieak I
10 guess, P-A-S-I-E-A-K, you estimate that he, that
11 that candidate received a little less than eight
12 percent of the Latino vote, Dr. Chen estimates 35
13 and a half percent.

14 Do you see that?

15 A. I see that.

16 Q. And according to Dr. Lichtman that's
17 a delta of 27.6 percent and you agree with that
18 math I presume.

19 A. I agree with that math. I would have
20 to double check that that was indeed the estimates
21 that I provided in the appendix table of my initial
22 report, I believe I don't have reason to doubt it
23 offhand.

24 Q. And the same one, your answer would
25 be the same, you don't have any reason to doubt the

1 math that there was in fact a difference in
2 calculation between you and Dr. Chen?

3 A. Correct.

4 Q. Okay. But since you've received this
5 report you haven't gone back to see to see if you
6 or Dr. Chen was accurate?

7 A. Well, I did not review Dr. Chen's
8 materials, I did not go back and specifically
9 investigate issues related to this table, that's
10 correct.

11 Q. Okay. And are you familiar with the
12 concept of a reality check?

13 A. Sure.

14 Q. Okay. And what does that mean to you
15 in the context of this work that you do?

16 A. A reality check I imagine would be a
17 sort of qualitative assessment of whether
18 statements are plausible.

19 Q. Okay. And did you do any of those in
20 this analysis, look at something and say wait a
21 minute, this doesn't for example add up?

22 A. Yes. In double checking my work in
23 my initial report and my rebuttal report as I do
24 with all of my statistical analyses and scholarship
25 in general, which I frequently use I guess the

1 technique of reality check.

2 Q. Okay. In your rebuttal report you
3 talk about the use of elections in district, House
4 District 19 and then it says 6. Remember that?
5 This issues involving these two elections is that
6 they both have a relatively low percentage of
7 Latino citizen voting age population, 19.2 percent
8 and 7.7 percent respectfully.

9 A. I see this discussion on the bottom
10 of page 3 of my rebuttal report, yeah.

11 Q. And you write I think on page 3 of
12 your report, we could obtain more precise estimates
13 when precincts tend to be more racially homogenous.

14 Do you recall that?

15 A. The last line on page 3 I write,
16 furthermore, the overall district share of a racial
17 group's population is entirely compatible with the
18 existence on nonexistence of racially homogenous
19 precincts which help increase the precision of EI
20 estimates.

21 Q. Right. And whether or not a precinct
22 is racially homogenous is not dependent on a raw
23 number I believe rather a percentage, correct?

24 A. It is possible to have racially
25 homogenous precincts with a small subpopulation of

1 the racial minority group, a large one in terms of
2 raw number or share of the electorate.

3 Q. Explain that to me. How can a small
4 subset be homogenous?

5 A. Sure thing.

6 So at the precinct level precincts
7 are much smaller than electoral districts, we could
8 have a few percent of a district being of a
9 particular racial minority group but those racially
10 minority voters being clustered in a small number
11 of districts making them very racially homogenous.

12 Q. You mean precincts.

13 A. Yes. I'm not sure what I said, but.

14 Q. I'll say it. So what you're saying
15 is a, for Latinos to stick to the example we're
16 talking about, Latinos could be a very small
17 percentage of representative District 40 but could
18 be homogenous in some precincts within House
19 District 40, right?

20 A. Right. That is possible.

21 Q. But whether or not a precinct is
22 homogenous setting aside the greater picture of the
23 district itself is dependent on the percentage of
24 minorities or Latinos in that precinct only,
25 correct? And let me give you an example. In a

1 precinct where there are 100 Latinos and 110 voters
2 that would be a homogenous precinct. I believe a
3 precinct in which there are 100 Latinos I believe
4 500 voters of various, in the other group that may
5 or may not be a homogenous group, homogenous
6 precinct but it's certainly not a homogenous Latino
7 precinct, right?

8 A. That's right. So I believe in your
9 example, in the first example I think 100 out of
10 100 percent something like 91 percent of the
11 precinct is Latino and then in the second example
12 20 percent is Latino and 80 percent is non-Latino,
13 both of those are somewhat racially homogenous, 80
14 percent non-Latino, 20 percent Latino, somewhat
15 homogenous but the first example is more racially
16 homogenous.

17 Q. Okay. And in the Senate District 6
18 with a 7.7 percent Latino CVAP can you identify or
19 did you identify which of the precincts are
20 racially homogenous?

21 A. I looked quickly at all of the data
22 of the precincts at the raw precinct level of data
23 level, however, the point here is that the
24 uncertainty generated by the presence or lack
25 thereof of racially homogenous precincts is

1 reflected in the uncertainty estimates of the EI
2 estimation, right, so those confidence intervals
3 will be wider when there are fewer racially
4 homogenous precincts to draw information from in an
5 election, so. This is all sort of part of, part
6 and partial of EI estimation is leveraging both the
7 relationship between percent Latino and percent
8 support for a given candidate as well as the racial
9 homogeneity of precincts which gives additional
10 statistical information that EI uses to build its
11 estimates and the uncertainty around those
12 estimates is in part due to the potential lack of
13 sufficiently racially homogenous precincts.

14 Q. Okay. All right. To translate that
15 the lower the Latino CVAP in a district less the
16 poor homogenous precincts you're likely to find.
17 Fair statement?

18 A. I do not believe that is a
19 necessarily fair statement mathematically, for
20 example the question you're seeing is, table, is
21 there a correlation between racial homogeneity of
22 precincts and the size of a racial minority group
23 as a population share within a district, and I'm
24 actually, I do not believe there is a strong
25 inherent relationship that you are suggesting in

1 that way.

2 Q. Okay. No, that's not the question
3 that I was asking so I apologize for that.

4 A. Me too.

5 Q. My question is if the Latino CVAP in
6 a district is lower, say five percent, there can be
7 Latino, there certainly can be Latino homogenous
8 precincts but the number of them will be smaller
9 than in the district that has a 50 percent Latino
10 CVAP, Latino people.

11 A. Not necessarily. So this, the
12 clustering of racial homogeneity within precincts
13 has to do with geographic segregation between
14 racial groups and that can occur when groups are
15 50/50 or 90/10 within --

16 Q. Fair enough.
17 Assuming similar housing patterns in
18 the two panels.

19 A. If we assume the same level of
20 geographic dispersion and segregation or lack of
21 segregation, then I would say that it is likely
22 related, the percentage of a racial minority group
23 within a district will likely relate to the
24 presence of, or extent of racially homogenous
25 precincts.

1 Q. Okay. And then the other example is
2 House District 19 with a 19.2 percent Latino CVAP.
3 Do you know how many of those precincts are
4 racially homogenous?

5 A. I do not know off the top of my head,
6 but again, the uncertainty that is generated from a
7 lack of sufficiently racially homogenous precincts
8 will be reflected in the uncertainty estimates that
9 EI estimation produces.

10 Q. And in that district do you know that
11 none of the precincts have a Latino CVAP greater
12 than 50 percent?

13 A. I would have to check that. But I
14 will say we can draw conclusions from EI estimation
15 and that that uncertainty, if you are correct that
16 there are not racially homogenous precincts in that
17 particular district then that uncertainty will be
18 reflected in the EI results, again giving us valid
19 EI results regardless of the potential for a lack
20 of racially homogenous precincts as you're
21 suggesting.

22 Q. And a precinct with a CVAP, Latino
23 CVAP of less than 50 percent you would have no way
24 of knowing in your analysis whether or not that was
25 a racially homogenous precinct for another group,

1 correct? They're all bunched together as other.

2 A. Interesting. So if a, you're saying
3 if a precinct is 50 percent Latino or below 50
4 percent Latino?

5 Q. Yeah. 45 percent Latino. Could be
6 racially homogenous black or could not be.

7 A. Right. I did not separate non-Latino
8 voters into ethnoracial groups, so I did not assess
9 the potential for racially homogenous, black, white
10 or Asian precincts. I looked at racial
11 homogenating between Latino and non-Latino voters
12 in precincts.

13 Q. Do you call a precinct that has 45
14 percent Latino CVAP a homogenous precinct for, in
15 the other category?

16 A. A 45 percent Latino precinct is
17 likely not racially homogenous because that leaves
18 55 percent for non-Latino voters, that would not be
19 considered as much.

20 Q. But it could be. It mathematically
21 could be.

22 A. I'm not sure how that would be
23 possible at 45 percent of a precinct that's a
24 particular ethnoracial group than 55 percent is,
25 even if it's one other racial group in the other 55

1 percent that's not homogenous.

2 Q. But if it's 52 percent black.

3 A. Homogeneity I would not say suggests
4 that if precincts would be around 50/50 of
5 ethnoracial groups. Homogenous precincts, the more
6 homogenous precincts would be closing in closer to
7 100 percent of that precinct as a particular
8 ethnoracial group.

9 MS. HULETT: Excuse me Mike, if I
10 could interject for the record just for a moment
11 that all of these questions are hypothetical since
12 no analysis has been given to us of the precinct,
13 CVAP precinct analysis in any race.

14 Q. (BY MR. KASPER) Okay. You said that
15 homogeneity is closer to 100 percent.

16 A. I would like to clarify what I mean
17 is that homogeneity is when a large share of a
18 given precinct is of a particular ethnoracial
19 category, in this case Latino versus non-Latino, so
20 45 to 55 percent or 50/50 is not racially
21 homogenous compared to 90/10, 100/0 and so forth.

22 Q. Right. Okay. So what is the point
23 at which it becomes homogenous?

24 A. That's an excellent question.
25 There's no sharp threshold for homogenous,

1 non-homogenous, it's a gradient continuous
2 dimension of homogeneity, right? So again, we want
3 for EI estimation and given that bylaw we do not
4 observe individual level of vote choice in the
5 secret ballot, we have to estimate individual level
6 voting from these precinct level aggregates, right?
7 So that requires some form of ecological
8 estimation, rather ecological inference, the sort
9 of gold standard, or ecological regression which is
10 another I would not consider invalid technique.
11 Both of these rely on aggregate level, precinct
12 level data to estimate individual level voting
13 patterns and ecological inference in particular
14 uses the methods of ecological regression but then
15 buttresses that with this homogenous precinct
16 analysis, so having more homogenous precincts does
17 facilitate greater precision and smaller confidence
18 intervals or estimates of voting patterns.

19 Q. Okay. Part of that was really good,
20 I'm going to have to remember that, one of those
21 clauses.

22 But your job at some point you have
23 to declare a precinct homogenous or non-homogenous?

24 A. That is not the case. Again, racial
25 homogeneity in precincts assists ecological

1 inference techniques in reducing the confidence
2 intervals and increasing the precision of our
3 estimates of individual level voting patterns.

4 Q. And if I understand your explanation
5 correctly in determining whether or not you find a
6 precinct to be homogenous the answer is it depends.

7 A. Right. The question here at hand is
8 not whether districts are racially homogenous or
9 not, the point is that ecological inference draws
10 on the relative homogeneity of precincts in order
11 to assist in providing more precise and unbiased
12 estimates of individual level --

13 Q. What I'm getting at is that you said
14 that a precinct in a band of 45 to 55 you would not
15 find to be a homogenous precinct, a band in the 95
16 to 100 you would, so somewhere in between is the
17 threshold and I'm just trying to determine what is
18 the threshold and what do you use to determine
19 where the threshold is?

20 A. That's an excellent question and
21 again, there is no sharp threshold, we can talk
22 about is it a cold day outside, you know, we say
23 it's colder than another day but there's no
24 universally accepted scholarly sharp threshold for
25 this question.

1 Q. Okay. But it's somewhere north of 55
2 degrees to use your example.

3 A. We can absolutely say that a 90/10
4 precinct is much more racially homogenous than a
5 45/55 precinct. And if we're looking into racial
6 groups then yes, the least homogenous possible is
7 50/50 and the most homogenous possible is 100 to
8 zero.

9 Q. Okay. So every precinct has a level
10 of homogeneity.

11 A. Correct.

12 Q. Okay. So can we return your
13 attention back to your rebuttal report?

14 A. Sure.

15 Q. Page 3 of your report. This is the
16 House District 19 2020 primary election? There are
17 three candidates, Duplechin, D-U-P-L-E-C-H-I-N,
18 LaPointe, L-A-P-O-I-N-T-E, and Vasquez Bonnin,
19 B-O-N-N-I-N that we talked about before.

20 Do you see that?

21 A. Yes.

22 Q. Okay. So let's look at the Latino
23 estimated vote for those candidates. 22.96 for
24 Duplechin, 30.66 for LaPointe and 42.3 percent for
25 Vasquez Bonnin, that's the one we talked about

1 before where you found that there was no cohesive
2 Latino voting, right?

3 A. Correct.

4 Q. That only adds up to 95.92.

5 A. I believe that's correct.

6 Q. That's not possible, is it? I mean
7 all the Latinos who voted they have to be in one
8 category or the other.

9 A. No. So some of those elections the
10 data includes write-in candidates and precinct over
11 and under counts, so that would presumably be the
12 difference to 100.

13 Q. Wait. Wait, wait, wait, wait, wait.
14 Over and under. How does an over count -- do you
15 know what happens to an over count in Illinois?

16 A. I'm not familiar with statutory law
17 in Illinois over precinct over counts, no.

18 Q. Would it surprise you to learn that a
19 ballot that's over voted, meaning that you vote for
20 both candidates, is not counted?

21 A. That would not surprise me.

22 Q. Yeah. So it's not that. And an
23 under vote is where you vote for one race but not
24 another, right? In primary election, like you
25 could have voted in the presidential primary in

1 2020 and just skipped this race, right, that's an
2 under vote?

3 A. Right.

4 Q. Okay. So you, in your 95, adding up
5 to 95 percent you think that some of that is
6 attributable to that?

7 A. I would have to look but it's very
8 ordinary and, in these sorts of analyses that
9 write-in candidates, that write-in candidates, over
10 counts and under counts --

11 Q. Sure. But the results here are just
12 for the results for this race.

13 A. Right.

14 Q. So that if someone skipped this race
15 they wouldn't be included. There's no zero zero
16 that don't get counted, you know there's 20 ballots
17 that are not counted, they're not reported as such.

18 A. So again it is possible, I would have
19 to check whether this is the case or whether
20 there's the presence of write-in candidates, but
21 typically in data files it is possible that they're
22 logged as under counts and then the total
23 electorate is a larger number than the number of
24 people who voted for the particular candidate.

25 Q. Okay. All right. So -- okay. So

1 that's an approximately four percent you think
2 could be attributable to that?

3 A. I believe write-in candidates and
4 over counts and under counts likely explain this
5 difference.

6 Q. And do you know if there were any
7 write-in candidates in this election?

8 A. I don't recall off the top of my
9 head.

10 Q. Do you know how to become a write-in
11 candidate in Illinois?

12 A. I do not know the statutory law.

13 Q. In Illinois you have to register
14 several weeks if not months in advance. In other
15 words we don't call them Mickey Mouse votes
16 anymore, so in other words you have to register to
17 be a write-in candidate and do you know if that
18 happened in this election?

19 A. I'm not aware of that.

20 Q. But there would be a report and the
21 result is write-in candidate so and so and then
22 there would be a fourth candidate is my point.

23 A. It's my understanding in some data
24 files they don't name the write-in candidate if it
25 says all right, unless there's a highly competitive

1 write-in candidate that some data files with
2 precinct level returns simply just say total
3 write-ins.

4 Q. Did you study any phenomena of
5 write-in candidates in your work?

6 A. No. I attempted to analyze the
7 Latino candidates of choice, none of which were
8 write-in candidates.

9 Q. I mean in your scholarship anywhere,
10 anywhere else, have you used that phenomena?

11 A. No. I have not specifically engaged
12 in --

13 Q. Let's turn you attention to the same
14 chart, the non-Latino vote for the same three
15 candidates.

16 A. Uh-huh.

17 Q. 19.63 for Duplechin, 40.22 for
18 LaPointe and 27.29 for Vasquez Bonnin. But again,
19 that doesn't add up to 100 percent, in fact that
20 only adds up to 87 percent, so where's the other 13
21 percent?

22 A. Again, data files often contain over
23 counts, under counts and write-in candidates, so
24 I'd have to look into it.

25 Q. Thirteen percent, you think that's

1 plausible that those things account for a 13
2 percent shortage?

3 A. I believe it's possible.

4 Q. Have you ever seen that before, that
5 high?

6 A. There are certainly cases in which
7 write-in candidates, over counts and under counts
8 or even more specifically just write-in candidates
9 achieve 13 percent support.

10 Q. Sure. Sure. But in Illinois if a
11 candidate has received 10 percent of the vote or
12 more that would appear as a reported candidate, I
13 know you don't know that, but isn't that the case
14 in most states?

15 A. In the data files it's not
16 necessarily the case that a specific write-in
17 candidate would be named even with some non-zero
18 percent of support.

19 Q. Okay. You said that you would have
20 to look into that. Did you add these numbers up
21 and realize that it came up 13 percent short of 100
22 and just decide not to look into it, or did you
23 just not notice that?

24 A. No, I did not think it was a abnormal
25 to have shares not add up to 100 percent given the

1 presence of write-in candidates and under counts.

2 Q. Okay. Let's go to Dr. Lichtman's
3 report, and I think this is page 54. Might be 55.
4 The pages have gotten all messed up.

5 A. Same here. Table 6?

6 Q. Yeah. No, that's not what I'm
7 looking for. We'll have to come back to that.

8 Can I turn your attention now to your
9 original report?

10 A. Sure.

11 Q. This is table A1 at the end.
12 Appendix A.

13 A. Okay.

14 Q. The first entry there is House
15 District 1. See that?

16 A. Yes. House District 1, primary year
17 2018.

18 Q. And Candidate Aaron Ortiz won 61.46
19 of the Latino vote, Candidate Burke received 32.04
20 of the vote, right?

21 A. Yes. Those are the estimates on the
22 table there.

23 Q. And again, that number is short of
24 100 percent by six and a half percent, correct?

25 A. Correct.

1 Q. And then the third entry on that
2 chart, House District 2, 2016.

3 A. Yes.

4 Q. Between Acevedo and Mah, and there's
5 a write-in. So can you explain why the write-in
6 appears in this election but not in the others
7 where you speculate that that could contribute to
8 inaccurate math?

9 A. No. Presumably this is due to data
10 formatting so across election years, election
11 districts and types of elections that formatting
12 for the data files from the state of Illinois, Cook
13 County and so forth, vary and in my code I attempt
14 to analyze the Latino candidates of choice and
15 named challengers to those candidates, so that was
16 picked up by the code which I would consider not
17 necessarily an error but inconsistent with the
18 other analyses that tried to exclude those write-in
19 candidates.

20 Q. Okay. but changes in coding, you're
21 not aware of any changes in the coding that the
22 election authorities here in Illinois have
23 implemented these elections, in between these
24 elections, are you?

25 A. No. I'm not aware of the particular

1 norms or rules around any data formatting from
2 Illinois, Cook County or other election
3 administrators in Illinois.

4 Q. So let's go back to that election
5 House District 2, 2016. In the non-Latino vote
6 Acevedo, 34.42, and Mah, 68.26, and a write-in
7 candidate apparently got point 56. Again, those
8 numbers don't add up to 100 percent so the
9 non-Latino vote less than 100 percent, and you
10 would attribute that to the same things you've been
11 explaining so far?

12 A. So if I understand your question
13 correctly looking at House District 2, 2016
14 primary.

15 Q. Yes.

16 A. And that the non-Latino numbers in
17 this case add up to --

18 Q. Over 100 percent?

19 A. Yeah. 102 or so.

20 Q. 103.2.

21 A. Uh-huh.

22 Q. So how does that happen?

23 A. So again, via over counts, under
24 counts and in this case a primary election in which
25 I would have to look at the data files, the

1 potential for a, I believe this is the Democratic
2 primary but the potential for individuals in the
3 Republican primary have been erroneously included.

4 Q. Erroneously included by whom?

5 A. I'm referring to the same correction
6 that I made of the two elections in the rebuttal
7 report there.

8 Q. By you you mean.

9 A. Yes. By the data coding and
10 formatting --

11 Q. As opposed to the election authority.

12 A. Yeah. That's the case. But in
13 analyzing large number of elections and trying to
14 use consistent data coding procedures, differences
15 in formatting across election types, years, and
16 primary versus general and elected office being
17 sought on their differences in formatting that
18 require significant data coding procedures and
19 formatting prior to analysis, and I would imagine
20 that that explains these small differences from 100
21 percent taking over.

22 Q. Okay. Small differences. I'm going
23 to hold you to that.

24 Okay. So Theresa Mah in 2016, see
25 she earned 68.2 percent of the non-Latino vote,

1 right?

2 A. That's my estimate in that table,
3 yes.

4 Q. Do you know Ms. Mah's race or
5 ethnicity?

6 A. I do not know certainly but one could
7 make an educate guess, so.

8 Q. Okay. Would you be surprised if I
9 told you she was Asian?

10 A. I would not be surprised.

11 Q. And so that's 68 percent of the
12 non-Latino vote, how much of that is attributable
13 to Asians?

14 A. I did not analyze that specific
15 question in my report.

16 Q. They're just bunched together in the
17 other category, right?

18 A. The non-Latino category contains
19 non-Hispanic white, black, Asian American and
20 potentially other groups like Native American
21 voters.

22 Q. Right. Okay. So it's possible that
23 Mah prevailed because of bloc voting by Asians,
24 right, that's mathematically possible based on the
25 68 percent?

1 A. I would have to look, I would have to
2 look at the concentration of Asian voters in this
3 election and within this district because it's
4 unclear whether Asian Americans would be, the
5 phrasing of your question would be able to decide
6 the election in this case given the voting patterns
7 of the other ethnoracial groups in this election.

8 Q. And you could have determined that by
9 breaking down the other group had you chose to do
10 so.

11 A. It is possible to disaggregate the
12 other racial groups within the non-Latino category.

13 Q. Which would have told you whether or
14 not Asian bloc voting allowed Mah to prevail.

15 A. Right. Or I guess more generally
16 whether Asian American support was consequential in
17 this election or Asian American voters voted
18 cohesively in questions of that sort, yes.

19 Q. Okay. The next entry there is House
20 District 2, the same district in 2020 and there
21 were three candidates, Olson, Kozlar,
22 K-O-Z-L-A-R, and Mah again.

23 A. Yes.

24 Q. And the non-Latino vote for Olson is
25 23.62, for Kozlar is 5.1 and for Mah is 58.12.

1 That comes up to 13.2 percent less than 100, right?

2 A. I don't have reason to doubt your
3 math.

4 Q. Okay. Would that, you said small
5 deviations, is 13.2 percent short of 100 a small
6 deviation?

7 A. I would say it's a moderate
8 deviation.

9 Q. Okay. Okay. And you would still
10 though attribute this to under votes, over votes
11 and write-in candidates.

12 A. Right. And additionally whether,
13 again, this is a primary election, I believe a
14 Democratic primary election but whether Republican
15 registrants and primary, Republican primary voters
16 are counted in vote totals as well.

17 Q. By your coding.

18 A. By my coding and any plausible
19 coding.

20 Q. Okay. But can you draw a reasonable
21 inference do you think given that the write-in
22 candidate appears in the election above, there was
23 no write-in candidate in the same district, the
24 same primary election two years later because it
25 doesn't appear?

1 A. No. I am not sure whether write-in
2 candidates are present in any of those particular
3 elections or not without going back to the data
4 files and that one inclusion of a write-in
5 candidate in House District 2 primary 2016 table is
6 there because the code that I used to pick up
7 write-in candidates in order to focus on the Latino
8 candidates of choice and their named opponents did
9 not pick up that particular write-in format in the
10 data file in that particular election.

11 Q. Okay. And going back to 2020 and the
12 results for Theresa Mah you see that she received
13 61.46 percent of the Latino vote?

14 A. Yes.

15 Q. And 58.2 percent, or 58.12 percent of
16 the non-Latino vote, right?

17 A. Correct.

18 Q. So in this election I presume you
19 would say that there was cohesion for a Latino
20 preferred candidate and that would be Mah at 61.46
21 percent.

22 A. Mah is the Latino preferred candidate
23 and Mah received a majority of the Latino votes in
24 that election and that's Latinos voting cohesively
25 for Theresa Mah in this election.

1 Q. And then would you find the presence
2 of bloc voting by the other group in supporting Mah
3 of 58.12 percent?

4 A. Given that Mah is the Latino
5 candidate of choice I would not use the term bloc
6 voting against, in this case. I would say the
7 non-Latino voters voted as a majority for Mah as
8 well.

9 Q. So the non-Latino was cohesive?

10 A. Other non-Latino vote was cohesive,
11 yes.

12 Q. So in other words, the way you used
13 the terms when the non-Latino vote votes for the
14 Latino candidate are cohesive, but when they vote
15 for a different candidate it's bloc vote.

16 A. That's correct.

17 Q. And perhaps one is a little more
18 pejorative than the other?

19 A. Potentially yes, bloc voting,
20 B-L-O-C, voting is historically about blocking
21 ethnoracial minority candidates of choice.

22 Q. Okay. But nonetheless you may find
23 that this election resulted in polarized voting if
24 the delta between 61.46 percent 58.12 percent is
25 outside of the confidence interval, correct?

1 A. That's correct.

2 Q. So even though Mah did better amongst
3 the Latino voters than she did amongst the
4 non-Latino voters you still may find that that
5 election is racially polarized depending on the
6 competence.

7 A. In this election we see that the
8 competence intervals do overlap between the Latino
9 and non-Latino support for Teresa Mah as well as
10 the Latino candidate in this race, which is often a
11 proxy for the likely Latino candidate of choice.
12 Bobby Martinez Olson also received similar support
13 from Latino and non-Latino voters such that those
14 estimates are not significantly different either.

15 Q. By my question is regardless of what
16 the current confidence intervals you have here in
17 this race, if that, if the percentages that Mah
18 received were outside the competence intervals you
19 would find that racially polarized, right?

20 A. Then I would say yes, Latino support
21 would then significantly differ from non-Latino
22 support for Theresa Mah which would indicate racial
23 polarization in the voting pattern between Latinos
24 and non-Latinos.

25 Q. Even when the non-Latino group

1 prefers the Latino candidate, more than the Latino
2 voters.

3 A. Okay. So to clarify you're saying in
4 a case where non-Latino support for the Latino
5 candidate of choice is greater than the Latino
6 support for that Latino candidate of choice, is
7 that racial polarization?

8 Q. Yes.

9 A. That would be a type of racial
10 polarization but that would not be the relevant
11 form for determining whether or not Latinos are
12 able to get their, receive electorate
13 representation through voting, but that would
14 indeed be a form of racial polarization.

15 Q. All right. Thank you.

16 The next one is House District 4,
17 2018 election, the first name in that category is
18 Alyx Pattison. Do you see that one?

19 A. Yes, I see this one.

20 Q. And again if we add up the non-Latino
21 vote Pattison had 18.83, Shaw had 16.21, Ramirez
22 had 27.83 and Millan, M-I-L-L-A-N, had 14.2
23 percent.

24 Do you see that?

25 A. I see this.

1 Q. Do you know what that adds up to?

2 A. Off the top of my head I do not.

3 Q. Okay. Would you be surprised that
4 it's less than 100 percent by 22.9 percent?

5 A. I'm not sure that's correct. Can we
6 do that math one more time?

7 Q. Sure. 18.83, and maybe I did the
8 math wrong, it's probably more likely that I did.

9 A. Let me, hold on one second. I'm
10 doing this in my head.

11 You're correct, thanks.

12 Q. Is that a small deviation, 22.7 less
13 than --

14 A. It would be a moderately, moderate or
15 relatively substantial deviation.

16 Q. What does it take to be substantial
17 if you're missing 23 percent of the electorate?

18 A. I would not say that is missing 23
19 percent of the electorate. Again, these are
20 primary elections so potentially the case that I
21 believe this is the Democratic primary, that
22 Republican primary voters, write-in candidates,
23 over and under counts explain these differences,
24 this did not affect our ability to analyze racially
25 polarized voting in this election.

1 Q. But assuming -- strike that.

2 If there are 23 percent of the voters
3 by your own table are not reported, what their
4 preference was, right? So almost a quarter of the
5 voters in this election are not reported.

6 A. Well, again --

7 Q. How can that not affect your ability
8 to determine the rate of polarization?

9 A. It's not necessarily that 23 percent
10 of these voters are not reported but rather that
11 they didn't vote, for example that they are
12 Republican primary voters and therefore not within
13 the universe of these candidates and I would not
14 say those are, they're not voters in this election
15 but rather the overall denominator they're
16 accounted for but not in the numerator of these
17 estimates.

18 Q. I see. So the numbers you report
19 actually should add up to 100 percent.

20 A. Not necessarily.

21 Q. Or closer to that.

22 A. Again, not necessarily.

23 Q. Why not? You lost me.

24 A. Okay. So there are multiple
25 possibilities here. Write-in candidates, under

1 counts and then separately whether there are voters
2 in Republican primaries that did not vote for a
3 candidate in a Democratic primary.

4 Q. But those errors would be similar to
5 the ones that we talked about before where it was
6 within your coding or any coding that some other
7 expert in your position might have used rather than
8 they were, Republicans were inappropriately
9 included in the results reported by the election.

10 A. That's possible.

11 Q. But you have no reason to believe
12 that the data you received presumably from your
13 lawyers is inaccurate.

14 A. Correct. I have no reason to believe
15 the data is inaccurate.

16 Q. Okay. And turning to the next page,
17 page 24, the third one down, House District 22,
18 2016 primary election.

19 A. Okay.

20 Q. The non-Latino vote Grasiela
21 Rodriguez, 7.62, Jason Gonzales, 31.51, Joe
22 Barboza, B-A-R-B-O-Z-A, 3.03, Michael J. Madigan,
23 67.65. That adds up to 89.8. So that one again is
24 short of 100 percent of the voters and you would
25 attribute that to the same cause?

1 A. So we're looking at House District
2 22, primary 2016.

3 Q. Correct.

4 A. And we're looking at the non-Latino
5 voters. So 7.62 plus 31.57 -- that does not equal
6 100 percent -- would you mind adding that up for
7 me?

8 Q. I think it's 89.8. I could be wrong.

9 A. Well, Michael J. Madigan received
10 67.65 percent of the non-Latino vote.

11 Q. I'm sorry. Maybe it's over.

12 A. I believe it's a little bit over.

13 Q. I just wrote down the number, I
14 didn't write plus or minus.

15 You're right, I'm sorry, it's 109
16 percent.

17 A. Got ya.

18 Q. So here's my question, and I
19 understand what you would attribute this to, the
20 same things that you said before, correct?

21 A. Correct.

22 Q. Then why does the Latino vote add up
23 to 100? Shouldn't it be consistent?

24 A. Let's see that. 4.7 -- all right.
25 Do you mind if I use a calculator?

1 Q. Not at all.

2 A. Thank you.

3 That adds up to 94.87.

4 Q. Yeah, it's considerably closer. If
5 the errors are in the coding why isn't that
6 consistent?

7 A. It could have to do with the
8 distribution of all of these other factors and
9 that's a relationship to the demographic
10 concentration of Latinos across precincts.

11 Q. I'm sorry, could you repeat that?

12 A. Sure. So the distribution of
13 write-in votes, over counts, under counts, can vary
14 based on the racial concentration of Latinos and
15 non-Latinos across precincts generating these
16 differences in the Latino versus non-Latino totals.

17 Q. Why would the concentration of
18 Latinos in a precinct affect the error rate?

19 A. If by error rate you're talking about
20 the difference between 100 percent and the total,
21 precincts that are heavily Latino may have
22 different rates of Republican primary voters, over
23 counts and under counts and write-in candidates.

24 Q. Okay. If that were the case then
25 wouldn't you expect the error rates to be higher in

1 the Latino, heavily Latino concentrated precincts
2 rather than low?

3 A. No, not necessarily, we can't
4 determine either way, ex ante.

5 Q. Okay. Let's move on to the 20, the
6 next one down is House District 39, 2012 primary
7 election, candidates are Berrios and Guzzardi.

8 A. Right.

9 Q. Do you see that?

10 A. Yes.

11 Q. By my mathematics the mathematics are
12 off in the non-Latino vote by 3.4 percent, or over,
13 it's 103.4 percent for him. The Latino vote is
14 under by four percent for a total difference of 7.4
15 percent.

16 Without making you do the math again
17 does that surprise you?

18 A. No, that does not surprise me.

19 Q. Okay. One is over and the other is
20 under by roughly the same amount?

21 A. No. Again, this is likely related to
22 the distribution of Latinos across precincts and
23 the distribution of write-ins, under voting and
24 potentially Republican primary voters.

25 Q. All right. Let's go to the next one,

1 page 25. The next one.

2 A. Okay.

3 Q. Goldberg and Martinez?

4 A. Yes.

5 Q. The Latino vote, 6.57, Goldberg, and
6 72.61 for Martinez.

7 A. Yes.

8 Q. You don't need a calculator to show
9 that that's way short. 20.8 percent short,
10 correct, short of 100.

11 A. That sounds right.

12 Q. And would you find that to be a
13 significant deviation, 20.8 percent?

14 A. I would say that would be a
15 moderately substantial deviation from 100 percent.
16 Again, likely related to, I believe this is the
17 Democratic primary, likely related to the
18 Republican primary voters, under counts and
19 potentially write-in candidates and their
20 distribution across precincts.

21 Q. Okay. And when you saw this did you,
22 did this not get your attention?

23 A. Not in particular, no. This is not a
24 significant issue in analyzing racial polarization
25 particularly in primary elections.

1 Q. Okay. So it's not a significant
2 issue when the total vote you're reporting is less
3 than 80 percent, adds up to less than 80 percent.
4 I guess my question is what would it take to be
5 significant?

6 A. Again, the question of racial
7 polarization is the difference in average
8 electorate support in this case between Latinos and
9 non-Latinos, that is not affected by the presence
10 in the analysis of analyzed total voters who come
11 from the Republican primary, write-in candidates
12 and so forth.

13 Q. Right. No, I get that, and you can
14 run your polarization based on whatever numbers are
15 on the page, right? But it did not occur to you
16 that maybe I should double check why it's so short
17 of 100 percent?

18 A. I would say that this did not present
19 itself as a serious issue.

20 Q. And let's look at the non-Latino
21 vote, 32.12 percent for Goldberg and 54.05 percent
22 for Martinez. Again, that adds up considerably
23 short of 100 percent, 13.8 percent less than 100
24 percent. So this number again is considerably
25 short, so both of these reports of the total, the

1 percentage of Latino voters who voted for Goldberg,
2 the percentage of non-Latino voters who voted for
3 Goldberg and Martinez in both instances are short
4 of 100 percent and one would think that since it's
5 a percentage that you're measuring that they should
6 add up to 100 percent and they don't, in each of
7 these cases that I just mentioned, right? Each of
8 the elections we just went through, right? In each
9 of those if the math is correct I'm right about
10 that, they're short of 100 percent, right?

11 A. They're short of 100 percent.

12 Q. And in some cases over.

13 A. Again, I would say that is not a
14 significant issue for any form of ecological
15 analysis, whether EI or ER, ecological regression,
16 so for example ecological regression can predict in
17 a given precinct that over 100 percent of voters
18 voted for a particular candidate. These sort of
19 issues are not significant in understanding the
20 question of whether there is racially polarized
21 voting in a given election.

22 Q. And that's the concept of the reality
23 check?

24 A. Those issues have been present
25 throughout all forms of ecological regression and

1 ecological inference and I would not say for
2 example an analogous situation that a predicted
3 precinct in ecological regression, not ecological
4 inference, having a predicted support for a
5 candidate of say 103 percent, that is a statistical
6 sort of aberration within the process, that is not
7 an issue for understanding through ecological
8 inference or ecological regression techniques
9 whether or not an election was racially polarized.

10 Q. Okay. But when it's 20 percent short
11 does that not lead you to conclude that there's
12 some more numbers that need to be included?

13 A. No. I think it's possible to go
14 check whether for example Republican primary voters
15 or over, under counts, write-in candidates explain
16 these deviations from 100 percent but deviations
17 from 100 percent in and of themselves are not
18 issues for the analysis or for understanding the
19 existence of racially polarized voting.

20 Q. And you said it was possible to go
21 check to see whether or not that was the cause of
22 this, but you didn't do that, right?

23 A. I did look through the data files but
24 no, looking for this particular issue of deviations
25 from 100 percent, because again, it is not central

1 or significant to the question of whether or not
2 racially polarized voting exists within a given
3 election.

4 Q. I'm going to move on to a new subject
5 if you want to take five minutes before we start
6 again.

7 A. I'm all right. But I'm happy --

8 Q. Let's do that if you don't mind.

9 A. Sure.

10 (WHEREUPON, A RECESS WAS TAKEN BY THE PARTIES)

11 Q. (BY MR. KASPER) I'm sorry Dr.
12 Grumbach, you're going to probably get used to this
13 when I say I'm moving on to another subject and
14 then I realize all the questions I forgot, so then
15 we'll move on.

16 A. No problem.

17 Q. In your rebuttal report talking about
18 House District, this is on page 2, House District
19 19.

20 A. Yes.

21 Q. And House District 40.

22 A. Yes.

23 Q. You indicated before that you
24 corrected the errors when Dr. Lichtman pointed them
25 out to you and you re-ran these tables, right?

1 A. Correct.

2 Q. And my question is when you saw those
3 and you re-ran them why didn't you rerun all the
4 others with the same errors?

5 A. These I had the time in the short
6 timeframe to look at these two, go through, see
7 whether Republican voters, under counts, over
8 counts and write-ins were included, but certainly,
9 and the rest did not appear to be estimates that
10 were implausible the way these did.

11 Q. Okay. Even the one that was 20
12 percent short.

13 A. Again, the deviation from 100 percent
14 as a total, especially in multi-candidate primary
15 races is not a relevant consideration for whether
16 the analysis of racially polarized voting is valid
17 or not.

18 Q. Okay. At first you said you didn't
19 have the time, but you had the time to do the first
20 two, I forgot which exactly.

21 A. It was a combination of the fact that
22 those were relatively implausible estimates that
23 Dr. Lichtman pointed out, went through those, plus
24 the short timeframe meant that I should prioritize
25 reanalyzing these two elections.

1 Q. Did you in fact go back and look at
2 the plausibility of the others or did you not have
3 time?

4 A. Yes, I did. I did not have time to
5 go through each individual data file the way, there
6 was considerably more time.

7 Q. Okay. So these two are the only two
8 that you found to be significant errors.

9 A. Yes.

10 Q. And even including, and so the one,
11 the last one we talked about with the 20 percent
12 was not significant in your eyes.

13 A. No. So again, the deviation from a
14 total of 100 percent, especially in multi-candidate
15 and primary races is not a significant
16 consideration for whether they're valid estimates
17 for assessing the question of racially polarized
18 voting in an election.

19 Q. Okay. So in explaining the
20 differences, the reason why it's either slightly or
21 moderately significantly in your words above or
22 below 100 percent I think you explained four
23 potential outcomes or combinations of those four.
24 The first was write-in votes.

25 A. Correct.

1 Q. And in one of these columns write-ins
2 appear, was that Theresa Mah, and it's the third
3 entry on page 1 of your appendix to your original
4 report, it's on page 23.

5 A. 23, page 23 in the House District 2
6 primary 2016 write-in does appear.

7 Q. Right. And that's the only one it
8 appears in, in that table.

9 A. In the entire table, I will have to
10 look.

11 Q. Wait, there's another one, I'm sorry,
12 I apologize. The third from the bottom, SD 11.

13 A. SD 11 general 2020.

14 Q. Okay. So in that I would conclude
15 that that means that there were not write-in
16 candidates or write-in results that were reported
17 in any of the other elections but you think that
18 it's possible that there were.

19 A. It's definitely possible. That in
20 the data files there's write-in candidates so there
21 are various ways through coding that statistical
22 analysts code different formats of different data
23 spreadsheets that can result in some cases write-in
24 candidates being out put to this payable and in
25 some cases not.

1 Q. And who did that in this case, the
2 coding?

3 A. I did the specific coding.

4 Q. So you're saying the coding that you
5 did could have reported the write-in candidates in
6 HD 2 and SD 11 but missed them in other elections.

7 A. That excluded them in other elections
8 and included them in this election.

9 Q. Why would it spit out the entry on
10 the page for some and not the other?

11 A. No. So there are many possible
12 reasons but one such reason is I looked for
13 write-in as right space in rather than dash in for
14 example, and in some of the data spreadsheets
15 write-in would not have a hyphen or not be
16 capitalized or be in a potential different column
17 position or have an asterisk put in by an election
18 administrator. There are a multitude of reasons
19 across many, many different elections with
20 different years, different primary versus general
21 and elected offices being sought that formatting
22 could result in write-ins being, outputted to the
23 table or not.

24 Q. And how many of those possibilities
25 did you meet, write slash in, caps, one word, two

1 words?

2 A. I would have to look into the code
3 but I would imagine space and I imagine I
4 capitalized it.

5 Q. Okay. And then the next one is you
6 say is a possible inclusion of Republicans?

7 A. Right. So in these primary
8 elections, mostly Democratic primary elections some
9 of the data files include Republican primary voters
10 even when there is not a Republican candidate who
11 filed to run in the primary, and I would have to
12 look into their potential inclusion in total
13 precinct votes or duplicates of the same precinct
14 in separate rows that may have been analyzed in
15 that case.

16 Q. And is that what caused some of the
17 errors in the first two, that you did correct in
18 the rebuttal report, HD 19 and HD 40?

19 A. That's correct.

20 Q. Okay. But you didn't go back to
21 check to see if that error was repeated in these
22 others?

23 A. No. Again, Dr. Lichtman aside from
24 those, his ecological impression results were
25 consistent and I assume he, presumably given that I

1 haven't seen his data and things like that that he
2 actually separately received data files and
3 essentially ran a separate study and found
4 consistent results, so that suggested to me to look
5 into those where he reported serious deviations
6 those two elections.

7 Q. I see. So you figured he had called
8 you out on it, he found others?

9 A. That would be one potential thing
10 that would happen.

11 Q. And then in your course of study and
12 expertise in this area it's your experience I
13 assume that states report Republican vote totals
14 separately from Democrats.

15 A. Just varies across many, across
16 election year, jurisdiction, level of office being
17 sought, across states, there are many different
18 ways elections are formatted in state, secretary of
19 state files and county election administrative
20 files, sometimes in separate spreadsheets which
21 makes life easier when it's a separate file, if
22 it's a Republican primary and Democratic primary
23 for the same election year and office, sometimes
24 they're combined into the same spreadsheet,
25 sometimes there's a separate column that notes

1 which party is being sought, sometimes they're
2 combined into the same row, precinct, it varies
3 tremendously and takes considerable coding and sort
4 of data structuring work to make this consistent
5 across election years, offices being sought and
6 jurisdictions.

7 Q. But here in Illinois we separate
8 them, right?

9 A. Some were in the same spreadsheet by
10 separate, there's potential --

11 Q. Separate columns.

12 A. No. In some cases they're in the
13 same column in separate rows.

14 Q. Separate rows. Okay.

15 A. And sometimes they're in separate
16 columns.

17 Q. Okay. But they're separate in some
18 way.

19 A. Yes.

20 Q. Okay. And under votes, explain to me
21 how you think under votes can be in the database?

22 A. So under votes potentially receive a
23 separate row that says the number of under votes
24 that can be counted in the total voters in an
25 election, but not for these given candidates that I

1 included in the table, right?

2 Q. So if there's 100 voters in a
3 precinct and only 70 of those vote in this race
4 then you think it could be reported as 30 under
5 votes which somehow may fail to make it into your
6 total?

7 A. This is potentially possible in some
8 cases.

9 Q. So that the number of under votes in
10 a precinct would vary from race to race.

11 A. That's correct.

12 Q. Okay.

13 A. And I'll just say, you know, in this
14 area of research this is extremely common given the
15 difference in formatting across election files
16 provided by secretaries of state, county election
17 administrators and so forth cross many years,
18 jurisdictions and offices being sought and primary
19 versus general election.

20 Q. And do you know if Illinois does
21 that?

22 A. Does what?

23 Q. Includes those under votes as, in the
24 total votes?

25 A. I am aware, I have seen in some data

1 files in this case row that report under votes.

2 Q. Okay. You have under votes for what?

3 A. In some cases under votes for each
4 precinct as a separate candidate sometimes named
5 under votes.

6 Q. Right. And so could be, an under
7 vote included in that total could not be an under
8 vote in this race but could be an under vote in
9 some other race, the judicial rate source.

10 A. That's possible, yes.

11 Q. In your studies have you found that
12 under voting is more prevalent in judicial
13 elections than others?

14 A. I'm not aware of judicial elections
15 versus others but ballot roll off or under voting,
16 especially for local and state level offices,
17 especially when it's, there are higher federal
18 offices, essentially presidential or US Senate
19 significant roll off often at lower level, state
20 and local races, yes.

21 Q. And that drop off or roll off that
22 you call it increases the lower on the ballot you
23 go, correct?

24 A. Yes. Research suggests --

25 Q. There's more roll off for dog catcher

1 than there is for president.

2 A. Well said.

3 Q. And over votes, explain to me how you
4 think over votes can --

5 A. Over votes as well potentially a
6 person voting for multiple candidates or
7 potentially in illegible sort of duplicate vote or
8 something like that can be included in some data
9 files as a separate row.

10 Q. Do you know if over voting is
11 permitted in Illinois?

12 A. So I, to the best of my knowledge
13 certainly voter fraud is absolutely illegal, in
14 which case somebody votes twice. But an over vote
15 due to marking multiple candidates I believe the
16 procedure is to not count that for any candidate,
17 but that that is not a violation of that.

18 Q. I'm sorry, I'm not talking about
19 voter fraud. Do you know if it's technologically
20 possible to over vote in Illinois? Does the voting
21 equipment allow that?

22 A. I'm not sure and in the case of
23 absentee mail-in ballots I assume this varies.

24 Q. Okay. Would you be surprised to
25 learn that it's not possible to vote on the, over

1 vote on the increasing voting equipment?

2 A. I would not be surprised by that, no.

3 Q. So if that were true then that would
4 make it a less likely explanation for the errors.

5 A. Potentially less likely than all else
6 equal different in-person voting technology but
7 given especially in 2020 races the presence of
8 COVID and the use of absentee ballots as well as
9 the overall use of absentee ballots across these
10 years I would not say it's out of the whelm of
11 possibility.

12 Q. Okay. Going back to your rebuttal
13 report, now I am going to move on.

14 A. Okay.

15 Q. And I want to talk about these win
16 rates.

17 A. Sure.

18 Q. Going back, this is on page 4 at the
19 top of your report where you talk about, you
20 respond to Dr. Lichtman's conclusions that the
21 Hispanic candidates of choice prevailed in 21 of 23
22 elections for a win rate of 91 percent. You say,
23 you go on to say in the next sentence, most of
24 those elections involve special circumstances,
25 incumbency, appointments and majority Latino

1 districts.

2 I assume that incumbency you're
3 referring to what you refer to as the incumbency
4 advantage, right?

5 A. Correct. A candidate is an incumbent
6 when they have held that office. When they're
7 running for the same office that they currently
8 hold and the incumbency advantage is the advantage
9 that those incumbent candidates have over
10 non-incumbent challenger candidates in elections,
11 yeah.

12 Q. And that arises from name
13 recognition, services, things like that.

14 A. That's correct.

15 Q. So you would attribute incumbency
16 advantage to any incumbent regardless of how long
17 they've held the office?

18 A. Incumbency advantage may vary based
19 on the term in office and there's some scholarly
20 debate, on that point, but it's certainly the point
21 that there's a substantial incumbency advantage
22 even after the first term, yeah.

23 Q. You note that nine of the 16 Latinos
24 in the Illinois legislature were initially
25 appointed, correct?

1 A. Yes. And I believe I addressed that
2 in my initial report in further detail. Yeah.

3 Q. Do you know if those are Democrats or
4 Republicans or a mix?

5 A. I would have to look. I believe most
6 are Democrats, but.

7 Q. Would you be surprised if I told you
8 all were Democrats?

9 A. I would not be surprised.

10 Q. And are you familiar with the
11 appointment process in Illinois?

12 A. Not in detail, no.

13 Q. Okay. Do you know how someone goes
14 about getting appointed?

15 A. Typically, in general how somebody
16 gets appointed if there's a death, untimely
17 retirement or a, an appointment for example to a
18 higher level position for a given incumbent then
19 typically the governor appoints a replacement.

20 Q. Okay. Right. In Illinois an
21 appointment follows a mid term vacancy in the
22 office like it does in most states, through death,
23 resignation, whatever. Here in Illinois the
24 governor doesn't make that appointment, the
25 political party, the local political party

1 officials make that appointment to complete the
2 remainder of the term.

3 A. For which office?

4 Q. For legislative office.

5 A. Got ya.

6 Q. For legislative offices it's the
7 local political party leaders, Democrat,
8 Republican, whatever, someone resigns in mid term.

9 A. Right.

10 Q. So are you aware that that's the
11 case?

12 A. I am aware.

13 Q. Okay. And so isn't the fact that the
14 local political party appoints Latinos, doesn't
15 that anner to the benefit of the Latino
16 representation because they are the ones who
17 provide the advantage?

18 A. I'm sorry, would you restate that
19 question please?

20 Q. When there's a vacancy in office and
21 the local political party appoints a Latino that
22 Latino candidate gets the advantage.

23 A. They then are appointed, became an
24 incumbent and receive the advantage through that
25 procedure, yes.

1 Q. Right. Do you know if the Republican
2 party has a history of appointing Latinos to get
3 that advantage?

4 A. I am not aware but I can infer given
5 that these Latino appointees you have informed me
6 that they are all Democratic appointees so I
7 imagine that means during the current set of Latino
8 incumbents in the Illinois General Assembly none
9 were appointed by the Republican party.

10 Q. So you're not aware of any examples.

11 A. That's correct. I'm inferring from
12 your statement that they're all appointed by
13 Democrats, that none were appointed by Republicans.

14 Q. And you wouldn't be surprised if I
15 told you that.

16 A. I wouldn't say I would be
17 particularly surprised.

18 Q. Okay. And this incumbency advantage
19 that comes with the, happens for lack of a better
20 word of office, in neither your initial or your
21 rebuttal report you quantify that. Can you
22 quantify what the advantage is?

23 A. So overall scholarship has done huge,
24 tremendous work in understanding the average
25 incumbency advantage and sometimes within

1 particular situations, but no, a predicted
2 incumbency advantage for a particular set of
3 candidates is much harder to estimate or to turn.

4 Q. And you cite some of that scholarship
5 on page 4 of your rebuttal report, right?

6 A. Correct.

7 Q. In 1991 talking about constituent
8 service. This is in the second paragraph. Do you
9 see that?

10 A. Yes, I do.

11 Q. Okay. 30 years old, right?

12 A. That's correct. That paper was
13 published 30 years ago.

14 Q. Okay. And does that talk about
15 Illinois at all?

16 A. I would have to look at the paper
17 again but in my understanding it uses data from
18 across states including Illinois as most incumbency
19 advantage studies do.

20 Q. And I'm not even going to try to
21 pronounce --

22 A. Ansolabehere, a leading political
23 scientist at Harvard.

24 Q. A-N-S-O-L-A-B-E-H-E-R-E, 2006.
25 Called Media Coverage, right?

1 A. Correct.

2 Q. And then the same authors in 2000
3 regarding relationships with local businesses and
4 other organizations.

5 A. Well, I believe instead of Eric
6 Snowberg, as a new author we have Charles Stewart
7 in the 2000 paper.

8 Q. Right you are. Fair enough.

9 Okay. Do any of those pieces of
10 scholarship analyze any elections in this century?

11 A. In the 21st century? I would have to
12 look at the Ansolabehere, Snowberg and Snyder
13 paper, but the King 1991 and Ansolabehere Snyder
14 and Stewart given that I --

15 Q. That would include elections from the
16 21st century for a piece written in the last
17 century.

18 A. That's correct.

19 Q. And do any of those talk about
20 appointed incumbents versus elected incumbents?

21 A. To the best of my knowledge I believe
22 they include in their analysis an overall
23 incumbency advantage that includes both appointed
24 and non-appointed incumbents.

25 Q. Okay. I'm not sure I agree with

1 that, but that's fine.

2 Are you familiar with any of the
3 other experts by the other plaintiffs in the case
4 or MALDEF in the case?

5 A. I was not aware of, or I had heard
6 the name of Alan Lichtman before, I was not aware
7 of some of the scholarship and then Jose Chen from
8 the University of Michigan I was familiar with.

9 Q. How about Anthony Fowler?

10 A. I'm familiar with Anthony Fowler.

11 Q. Have you read his paper A Bayesian
12 Explanation For The Effect of Incumbency from 2018?

13 A. I'm familiar with that paper but I
14 have not read it in, I believe since 2018.

15 Q. Okay. In it he says that quote,
16 existing theories, primarily institutional, are
17 unable to explain some of the empirical patterns,
18 close quote.

19 He's referring to the incumbency
20 advantage.

21 MS. HULETT: Excuse me Mike. Are you
22 going to make that an exhibit and did you send it
23 to us beforehand so he could look at the context?

24 MR. KASPER: I didn't send it to you.
25 I don't know if we've sent it to you to tell you

1 the truth. But yeah, I'm happy to send it to you.

2 Q. (BY MR. KASPER) Do you have a copy
3 of that paper Professor?

4 A. I can pull it up in 30 seconds or so.

5 Q. Okay.

6 A. Should I?

7 Q. Sure. If you have it.

8 A. Published in Electorate Studies, the
9 journal?

10 Q. Yes. Correct. 2018.

11 A. Okay. I have that up.

12 Q. Page 66.

13 MS. HULETT: Dr. Grumbach can take a
14 moment to review that.

15 MR. KASPER: Sure.

16 Q. (BY MR. KASPER) And I'm just going
17 to ask you a couple questions about page 66, 69 and
18 70.

19 A. Okay.

20 Yes. I'm on page 66 now. Is there a
21 passage you were reading?

22 Q. The passage I was reading begins,
23 existing theories, primarily institutional, are
24 unable to explain some of the empirical patterns.

25 Do you see that?

1 A. Yes. I see that.

2 Q. Then he goes on on that page to say
3 if all available information independent of
4 incumbency suggests that two candidates are of
5 comparable quality the voter will favor the
6 incumbent because the previous election provides an
7 additional positive signal. The phenomena in the
8 aggregate will produce a positive effect of
9 incumbents.

10 And then -- let me just cut to the
11 chase on this. On page 69 and 70. Starts on page
12 69, one particularly informative signal about
13 candidate Barr [sic].

14 A. Yes.

15 Q. Okay. Then he goes on to say quote,
16 if one of the candidates is an incumbent then the
17 voter knows that she won a previous election which
18 could be an informative signal about quality, the
19 same way that Academy Awards and Michelin stars are
20 informative signals about movies and restaurants.
21 These signals while surely imperfect and error
22 prone informs the voter or consumer that many other
23 people at some point in the recent past thought
24 this candidate, movie or restaurant was better than
25 a slip of alternative options, close quote.

1 Do you see that?

2 A. I do see that.

3 Q. But appointed incumbents haven't won
4 a previous election. Right?

5 A. Correct.

6 Q. They don't have the Michelin star --

7 A. In their first term election year
8 following an appointment they have not won a
9 previous election for that office.

10 Q. Correct. So they don't have the
11 Michelin star or the Academy Award to inform other
12 voters that others have found them worth watching
13 or eating, right?

14 Okay. So why is it relevant that
15 they were appointed?

16 A. This is, I, really a great question
17 in here, so first, so what Anthony Fowler is doing
18 in this paper is he's providing a formal game
19 theoretic, decision theoretic model which suggests
20 that the signal of a prior election can inform
21 voters about the candidate's quality in a
22 subsequent election as you're saying, but that is
23 not dispositive of the other mechanisms found in
24 all the vast incumbency advantage literature which
25 do not have to do with the signal of candidate

1 quality through past elections, but rather through
2 media coverage, constituency service, name
3 recognition, relationships with local businesses
4 and community groups and educational institutions
5 and religious organizations and so forth.

6 Q. And it could also be a negative,
7 right?

8 A. I ask what you mean.

9 Q. The point, the fact that someone is
10 appointed, especially here in Illinois where the
11 appointment is effectuated by political party
12 bosses, so it's possible that some viewers would
13 view that as a negative, that that appointment by
14 the political party bosses means you're an insider.

15 A. I'd say it's certainly possible that
16 some get a signal of an appointment that they don't
17 like the appointment process or the fact that
18 parties appoint people for vacancies and things
19 like that and that might be a noxious thing that
20 turns them off. I would say that any potential
21 amount of that mechanism reducing the advantage is
22 totally swamped by all the vast findings of that
23 pro incumbency advantage, literature, that media
24 coverage, constituency service, relationships with
25 local organizations and things like that provides

1 an incumbency advantage including to appoint
2 incumbents in their first election year following
3 an appointment.

4 Q. Each of those things takes time to
5 build off, media coverages, relationships with
6 influential groups, things like that.

7 A. To some extent --

8 Q. Where the name attaches instantly.

9 A. There is not research that suggests
10 this particular appointment procedure produces some
11 sort of turn off effect for voters, a negative
12 incumbency advantage for appointees. That would be
13 a very, that would be very much against the
14 scholarly consensus.

15 Q. You should do that study in Chicago.

16 A. That sounds great.

17 Q. But you understand, what do you
18 understand the word slating to mean?

19 A. Producing a slate of candidates.

20 Q. An endorsement by a political party
21 of groups, or of candidates, is that correct?

22 A. I'm sorry, what is the question?

23 Q. That slating is tantamount to an
24 endorsement to a candidate or group of candidates
25 by a political party.

1 A. Understood.

2 Q. Yeah. Okay. And the fact that
3 Latino, or that vacancies are filled by political
4 party bosses here in Illinois indicate that the
5 candidates who are appointed have access and are
6 successful at that slating process, correct?

7 A. That the candidates were successfully
8 slated, yes.

9 Q. Okay. And slating is one of the
10 Senate's factors in considering the totality of the
11 circumstances, right?

12 A. That I think is a legal question that
13 is not my particular question.

14 Q. Okay.

15 A. In this setting which is to determine
16 whether locations were racially polarized or not.

17 Q. Fair enough. But when nine of the 16
18 Hispanics in the legislature were initially
19 appointed based on your statement would it be
20 reasonable, knowing now that they're done so
21 through a slating process, would that lead you to
22 believe that they're relatively successful at the
23 slating process?

24 A. I think inherently by being appointed
25 you are successfully appointed, if not

1 toxicological statement, yeah.

2 Q. And if you were not appointed then at
3 some point you would have to, in order to be an
4 incumbent you'd actually have to win an election,
5 either an open seat or defeated the incumbent as
6 well, right?

7 A. Correct.

8 Q. And that happens not infrequently?

9 A. That's correct.

10 Q. Okay. If we're speaking in general
11 terms, Latino incumbents in the Illinois General
12 Assembly that appears not to be the case given the
13 high number of appointees.

14 Q. Right. Because what you're saying is
15 because seats become vacant either through death or
16 resignation that -- yeah. Less than half of the,
17 approximately half, a little bit less than half are
18 gained through an open seat or defeating an
19 incumbent.

20 A. Correct. From my count seven of 16.

21 Q. Besides incumbency what other special
22 circumstances are you referring to in your report
23 to discount the 21 of 23 win rate?

24 A. Right. Appointments and majority of
25 Latino districts.

1 Q. Okay. Why would you discount the
2 majority of Latino districts?

3 A. The majority of the Latino districts
4 have low probabilities inherently of non-Latino
5 bloc voting successfully defeating a candidate
6 given the population concentration of the
7 electorate in that jurisdiction. Or more precisely
8 is that there's low potential probability so it's
9 not an open case where we can estimate absent these
10 special circumstances the ability of Latinos to be
11 represented through their voting behavior when
12 they're not a large numeric majority of the
13 electorate.

14 Q. So are you suggesting, I take it from
15 that that you're suggesting that it's easier to
16 study districts where there's lower or closer to 50
17 percent majorities, or even less than 50 percent?

18 A. So there are separate questions. One
19 can study racially polarized voting really with
20 virtually any concentration of demographic groups
21 but then more specifically for assessing the
22 broader question of whether a given racial minority
23 group is able to achieve electorate representation
24 through their voting, that yes, yes, it is more
25 informative when groups in question are more equal

1 or the racial minority group is a minority within
2 the jurisdiction.

3 Q. Okay. So can I turn your attention
4 to some of the challenge districts?

5 A. Sure.

6 Q. And I guess the best way to do that
7 would be in your first report.

8 A. I do provide CVAP estimates for all
9 House and Senate districts for the Illinois General
10 Assembly.

11 Q. Okay.

12 A. In table A2 on page 26 of my initial
13 report.

14 Q. Yeah. Okay. And none of those
15 districts have a Latino CVAP above 50 percent,
16 right?

17 A. That's not correct.

18 Q. Which one does?

19 A. There are House District 21, House
20 District 24 -- are you talking about a subset of
21 districts or are you talking about in this table in
22 general?

23 Q. In this table. Let's start with
24 that.

25 A. Yes. In this table there are a

1 number of, so House District one has 59.4 percent,
2 Latino House District 21 has 52.6 percent Latino,
3 House District 22, 56.6 percent Latino. House
4 District 24, 62.6 percent Latino.

5 Q. I'm sorry. I'm getting a little
6 turned around here. Could we go to page 17?

7 A. Sure.

8 MS. HULETT: Of which document Mike?

9 MR. KASPER: The original report, his
10 original report. I don't think his second report
11 is 17 pages.

12 Q. (BY MR. KASPER) Page 17.

13 A. Yes.

14 Q. You represent that, when you say that
15 the Illinois house is 8.5 percent Latino and the
16 Senate is 8.2 percent Latino, is that right, do you
17 see that?

18 A. That's correct.

19 Q. And then you go on to suggest or to
20 say that Illinois is 11.2 percent Latino citizen
21 voting age population based on the 2015 to 19 ATF
22 survey, correct?

23 A. Correct.

24 Q. And you think that is the appropriate
25 measure of citizen voting age population, the 2015

1 to 19 survey, is that correct?

2 A. That is an original figure for Latino
3 CVAP in Illinois, yes.

4 Q. And I think from this discussion
5 you're suggesting that Latinos are under
6 represented in the Illinois legislature, right?

7 A. I would say that having 8.5 percent
8 Latinos in the Illinois State House and 10.2
9 percent in the Illinois State Senate is below the
10 population CVAP percentage, 11.2 percent in this
11 state, so that would be under representation.

12 Q. Okay. And are you aware that section
13 2 of the Voting Rights Act expressly states that no
14 racial group is entitled to proportional group of
15 representation?

16 A. I'm aware of that but it's not in my
17 purview of study.

18 Q. I think to cut on the chase, the
19 purpose of you making that estimate I think is in
20 furtherance of the concept that, of rough
21 proportionality that people in your field use, is
22 that right?

23 A. That's correct. In political science
24 it's a relevant question whether CVAP population is
25 represented proportionally in a legislature is a

1 relevant question for descriptive representation,
2 absolutely.

3 Q. And you believe that citizen voting
4 age population is the appropriate measure for
5 measuring proportional?

6 A. Ideally we like the voting eligible
7 public, VEP, which is statistically and practically
8 extremely difficult to determine through different
9 state laws around felonies, disenfranchisement and
10 things of that nature.

11 Q. Okay. But is it more appropriate
12 once you reach voting age population or voting
13 numbers?

14 A. Right. This is correct because that
15 includes non-citizens which currently in most
16 states are not in the number who are not eligible
17 to vote.

18 Q. In your discussions in your reports
19 about voter registration you compare Illinois to
20 other states in a negative way, is that correct?

21 A. I mean negative balance I'm not sure.

22 Q. Meaning the Latino registration rate
23 mechanic --

24 A. Are below average among states and
25 the gap among non-Latinos and Latinos and really

1 any other racial group and Latinos is larger than
2 the average gap in other state races.

3 Q. But in this concept of rough
4 proportionality you did not compare Illinois to any
5 other states.

6 A. That did not seem as relevant given
7 that we're talking about population proportion and
8 seats in the legislature within Illinois but I
9 would be happy to look at that. That's not --

10 Q. Would you be surprised to learn that
11 Illinois is ahead of most other states regarding
12 minority representation?

13 A. I would not be surprised to learn
14 that Illinois is above average in its proportional
15 representation of Latino CVAP in its state
16 legislature compared to other states.

17 Q. All right. In some of your
18 literature you have talked about Democratic
19 performers, democratic performance.

20 A. Yes.

21 Q. What do you mean by that?

22 A. So I believe you're referring to a
23 2021 paper that I wrote called Laboratories of
24 Democratic Backsliding, that's referenced in Dr.
25 Lichtman's report, thank you very much for reading

1 my scholarship, that's currently unpublished but
2 has a revise and resubmit which is in the process
3 publication at a top political science journal and
4 in this paper I studied democratic performance, in
5 the version that I believe you read a measure that
6 is mostly a quantitative measure of electorate
7 democratic performance among states between 2000
8 and 2018 and that measure is based on a state's
9 administration and procedures around voter
10 registration, for example the presence of same day
11 or automatic voter registration or no fault
12 absentee voting, voter ID laws as well as issues of
13 partisan bias and gerrymandering constructive
14 measure.

15 Q. Okay. What I noted in the paper on
16 page 12 you say quote, Illinois and Vermont moved
17 from the middle of the pack in 2000 to among the
18 top Democratic performers in 2018, correct?

19 A. I don't have the paper in front of me
20 but that's quoted in Dr. Lichtman's report and I do
21 know that that is indeed the case, that Illinois
22 moved from around the middle of the pack in 2000 to
23 a, the top handful, I'm not sure how top but
24 certainly the top group of sort of small D
25 democratic performers.

1 Q. On page 46 you say that Illinois
2 ranks number 3 or third in the nation.

3 A. Do you mind if I pull up the paper?

4 Q. Sure. It's on page 46.

5 A. Or that I have noted it.

6 Give me one moment to get that
7 particular version.

8 Q. No problem.

9 A. I believe this is figure A2
10 correlation with turnout of VEP.

11 Q. Okay.

12 A. That's correct.

13 Q. Okay, great.

14 A. So let's see. In 2018 -- yes. I'd
15 say Illinois is either second or third on my state
16 democracy index on this version in the 2018 panel
17 of that plot, yes.

18 Q. Okay. Thank you for the shout out,
19 we appreciate that. And you said similar things in
20 NPR I understand, do you remember an interview in
21 June 11, 2011 --

22 A. Absolutely. Thank you for listening.

23 Q. I'd be somewhat dishonest if I said I
24 heard it live. We found it.

25 A. Great.

1 Q. And you are, you said something along
2 the lines of yeah, you see some pretty big changes
3 where states like Illinois, Vermont really rise in
4 their sort of democratic performance as they make
5 their districts more equitable and they make their
6 ballot more accessible.

7 MS. HULETT: Again Mike, are you
8 going to make that transcript an exhibit, and if
9 you are can we please have it so we can review what
10 he said in the context of the interview?

11 Can I finish? To be fair he doesn't
12 have the whole transcript in front of him like you
13 do.

14 MR. KASPER: That's fine. We'll send
15 it.

16 Q. (BY MR. KASPER) Do you recall saying
17 that?

18 A. Not specifically but it sounds
19 consistent with these other statements we just
20 looked at so I think that's plausible.

21 Q. Okay. I think I read in your paper
22 that your Democratic performance index uses 61
23 indicators?

24 A. That's correct. That version uses 61
25 indicators, yes.

1 Q. And give me some examples so I
2 understand, besides what you've already said.

3 A. Sure thing. No fault absentee
4 voting, same day voter registration and I used to
5 have the turn out of the voting eligible population
6 but that was replaced in this revised version, in
7 this version have civil liberties procedures like
8 the level of assets, civil asset forfeiture that is
9 used in a state, youth pre-registration for voting
10 at age 16 and 17, requirements for post election
11 audits, allowing currently incarcerated people to
12 vote, having felony disenfranchise -- I'm just
13 going to say. Efficiency gap for gerrymandering,
14 the completeness of election returns data, district
15 compactness, the measures of the policy
16 responsiveness to public opinion at the state
17 level, on economic policies and on social policies
18 separately, voter ID laws whether strict or any
19 non-strict voter ID policy, other measures of
20 gerrymandering.

21 Q. Okay. And have you done any research
22 or study on Illinois since 2018?

23 A. Any research or study -- this is in
24 a broad sense?

25 Q. Yeah. Regarding how they would do it

1 with a democratic performer.

2 A. I began the procedures of collecting
3 these indicators for 2020 to extend this measure to
4 2020 but this has been extremely time consuming,
5 I'm going to have to get some more research
6 assistants on the case to help extend this measure
7 in a complete way to 2020.

8 Q. Okay. Are you familiar with Senate
9 bill 825 recently passed by the Illinois General
10 Assembly which is Public Act 102.15?

11 MS. HULETT: I'm sorry, objection.

12 If you're going to make that exhibit
13 or ask him questions about it I think it needs to
14 be provided to him.

15 MR. KASPER: I was just asking if he
16 was familiar.

17 MS. HULETT: Okay.

18 A. I'm not.

19 Q. (BY MR. KASPER) Hypothetically, if a
20 state were to enact legislation that included
21 provisions such as permanent vote by mail status,
22 curbside voting, allowing election officials to
23 accept mail-in ballots with insufficient postage,
24 establishing voting centers, making Electric Day a
25 state holiday providing a pathway for felons to

1 vote, standing acts as to voter registration at
2 high schools, providing for voting in county jails,
3 allowing disabled people to vote without
4 assistance, and tightening cyber security measures,
5 all of those provisions I take it are things that
6 would enhance rather than detract from a state's
7 democratic performance according to your 61 point
8 index?

9 A. That's correct.

10 Q. But you're not aware that Illinois
11 has enacted such a law.

12 A. I'm not aware of the specific
13 provisions of this law I believe you're referring
14 to but I will say in general as I mention in my
15 rebuttal report this measure and the cost of voting
16 in the index with state level measures on average
17 of quote de jure election law as well as procedures
18 like wait times for in-person voting and so forth
19 and those things are not specific to any racial or
20 ethnic minority group and their particular
21 experiences in small day democracy or electoral
22 democracy or inequalities between racial groups, so
23 I believe it would be unwise to draw conclusions,
24 especially around the narrower questions of racial
25 polarization in elections but also about issues of

1 descriptive representation and the potential for a
2 racial minority group to be represented through
3 their voting.

4 Q. Okay. Well, do you not find a
5 corollary between descriptive representation and
6 democratic performance?

7 A. So I do believe descriptive
8 representation can be, in some definitions of small
9 D democratic performance descriptive representation
10 may be central to that. In this case that is not
11 part of my question for the cost of voting index
12 and I would say it's certainly plausible that
13 descriptive representation may be facilitated by
14 the, you know, high democratic performance on
15 measures like these through for example universal
16 mail voting and so forth, but it's a separate
17 question so we actually, in this case I'm actually
18 analyzing the question in my report and rebuttal
19 report of the descriptive representation of Latinos
20 and racially polarized voting in Illinois
21 elections. So we have that to go on so I do agree
22 that a very descriptive democratic procedure would
23 probably hinder the potential for descriptive
24 representation or a racial minority group being
25 represented in elections but it's not

1 deterministic.

2 Q. Okay. Is it fair to say then that
3 southern Republican controlled states are, they're
4 worse on your democratic performance index than --

5 A. One of my findings is that Republican
6 controlled states receive lower scores on those
7 democratic performance measures.

8 Q. And they also do worse in terms of
9 descriptive representation, don't they?

10 A. That I would have to systemically
11 assess to answer that question.

12 Q. Okay. Do you have a gut reaction to
13 that?

14 A. Not particularly.

15 Q. Okay.

16 A. Historically, you know, pre 1965 this
17 was of course a, you know, very clear pattern, now
18 I think it would require a bit more systemic
19 analysis than a gut reaction.

20 Q. Okay. In that same article that I
21 just referenced of your, that you have out in front
22 of you.

23 A. Yes.

24 Q. This is on page 16 and 17.

25 A. Okay.

1 Q. And you talk about Republican efforts
2 to reduce democracies. What do you mean by that?

3 A. So again, on this measure of, you
4 know, democratic performance as measured through
5 for example voter registration law, the partisan
6 bias of gerrymandering, things like that. My one
7 finding using this measure is that Republican
8 controlled states are associated with and
9 Republicans are associated with lower democracy
10 scores on this measure and that states turning to
11 unified Republican control reduces in a relative
12 sense its score on this democracy measure.

13 Q. Okay. And I think you make some
14 comments that these efforts are tied to race. Can
15 you explain that?

16 A. Sure thing. So in this paper I do
17 not actually find strong associations or causal
18 mechanisms based in state racial demographics,
19 however, other literature provides theoretical sort
20 of substance that likely part of the relationship
21 between Republican control and lower Democratic
22 performance scores is related to the racial
23 politics at a national level currently.

24 Q. Okay. The quote that caught my
25 attention is on page 16 and 17 where you say

1 preferences with respect to race and partisan
2 identity provide the Republican electoral base with
3 reason to oppose democracy in a diversifying
4 country.

5 What do you mean by that?

6 A. So in the traditional political
7 science literature on racial rhett for example from
8 Larry Bobo at Harvard and Ben Touchings [sic] at
9 the University of Michigan, increased, as well as
10 from Dan Hopkins at Penn and many others, an
11 increase in the portion of a racial minority group
12 at a particular jurisdictional level, and in this
13 case I'm referring nationally to trends in
14 immigration may produce feelings of racial threat
15 from the incumbent sort of majority group and that
16 that can produce oppositional attitudes to
17 extending access to Democratic institutions to
18 those minority group members in a democratic
19 society.

20 Q. In other words you find it in a
21 growing, in a growing diversity, or areas of
22 growing diversity, Republican controlled
23 legislatures take measures to restrict voting?

24 A. No. So it's a bit of a nuance point
25 but I actually don't find that changes in state

1 level demographics predict whether Republican or
2 not predict changes in democratic performance on my
3 scoreboard, rather, I'm saying that clearly
4 nationally to understand why Republican states in
5 general are associated with lower democracy scores
6 race plays a role more nationally in national
7 partisan conflict. So I do think it's plausibly
8 explained, the question is what is the mechanism by
9 which Republican control leads to smaller small D
10 democracy scores and one plausible mechanism is
11 nationally the particular forms of racial politics
12 and racial conflicts occurring nationally that are
13 then played out through elections and public
14 opinion and partisanship, sort of national
15 electoral level.

16 Q. So that's exploring the reason behind
17 the lower amounts I suppose.

18 A. Correct.

19 Q. But the lower democracy scores do in
20 fact exist in Republican controlled states.

21 A. Correct.

22 Q. Can you quantify that at all or in
23 order of magnitude?

24 A. Yes, absolutely. So in my paper, in
25 this particular version of the paper you can see

1 this, so descriptively you can see this in figure
2 4, this is the raw correlation on page 14 where
3 there's a difference in 2018 between on the one
4 hand unified democratic and divided governmental
5 states and on the other unified Republican state by
6 a bit less than one standard deviation on this
7 democracy measure, and if you do what's called a
8 difference in differences model they're trying to
9 assess what is the relationship within state
10 partisan change, and state changing partisan
11 control in democratic performance. I find a
12 relationship where Republican control is associated
13 with valid negative point, between 0.4 and 0.5
14 standard deviation.

15 Q. You had me there until the very end.

16 A. Republican and differences within
17 state setup is associated with a negative 0.4
18 change in democracy score.

19 Q. I see.

20 A. So relative to not becoming unified
21 Republican the score is lower by negative .4
22 standard deviation.

23 Q. Okay. And -- okay.

24 A. I teach statistics, I should be able
25 to explain it, so.

1 Q. And how significant is that
2 deviation?

3 A. Relatively substantial.

4 Q. So it's a substantial difference.

5 A. Yes.

6 Q. And that is why you say, have said
7 that when a state is controlled by the Republican
8 party it's going to restrict democratic performance
9 in the state.

10 A. Yes. In this era that is what I find
11 in this data, yes.

12 Q. Okay. And I presume that all these
13 statements, the statements you make in this paper,
14 you still stand by those statements today?

15 A. I need to check with this revised
16 version that does sharpen the measure a bit and
17 remove, so through the peer review process I think
18 there's a little window in the day job of a social
19 scientist but through the peer review process
20 anonymous peer reviewers who are leading professors
21 in my field, they take, they go as brutally as
22 possible a hatchet to try to poke holes in your
23 study and then in response you strengthen your
24 study by any means you can to demonstrate that your
25 point is not, that your estimates are not biased in

1 any sort of way. So there are some small changes
2 but the overall finding we're talking about with
3 respect to party control, that is consistent.

4 Q. Okay. And in regards to your
5 democracy performance about redistricting and
6 districting actions, does that take that into
7 account as well? Is that one of the factors?

8 A. That is a main driver of the contents
9 of that measure, yes, issues of gerrymandering.

10 Q. Okay. And do states that go to
11 Republican control and restrict democratic
12 performance, how does redistricting play into that?

13 A. It plays a very large role in the
14 statistical finding, particularly the 2010 to 2011
15 redistricting cycle in Republican controlled states
16 does lead to reduced democracy scores and hence
17 that finding we're talking about that plays a
18 substantial role.

19 Q. Why does it lead to a reduced
20 democracy score? Why is that a heavily weighted
21 factor?

22 A. So first partisan bias and
23 gerrymandering I believe is a relevant factor in
24 assessing the small D democratic performance of a
25 state, whether an individual's vote counts in

1 determining the outcome of a given election in
2 their district, whether the partisan balance allows
3 their vote to sort of count equally or the
4 geographic efficiency of different voters is very
5 unequal, that does matter, so including it in a
6 measure matters but then I'll say in this
7 particular democracy measure I don't actually
8 determine the relative weighting of different
9 indicators and how it structures the measure, I use
10 a statistical model to do that so that measure is
11 actually a statistical, based on a statistical
12 model that I ask the data how should these various
13 factors be weighted in a state's democratic
14 performance and gerrymandering, via this modeling
15 procedure gerrymandering due to its relationships
16 within the data with other indicators comes out as
17 a very strong predictor of a state's democratic
18 performance.

19 Q. Okay. I think I get that. Because
20 Republican states that are gerrymandered to provide
21 partisan advantage to Republicans they're more
22 likely to get elected and more likely to enact
23 policies that restrict democracy.

24 A. That's been an additional argument
25 about, so you made a two step argument.

1 Gerrymandering provides partisan advantages to
2 Republicans which then leads to further reductions
3 in democracy, I don't analyze that specific chain
4 of mechanisms but that is plausible.

5 Q. It's a hypothesis for your next
6 table.

7 A. Yeah. I would just say statistically
8 it's difficult so you're talking about endogenous
9 components that interact with each other, so I'm
10 just actually looking at the partisan control but
11 the multi-step process you're talking about would
12 be a fascinating thing --

13 Q. We're getting a little far a field.
14 So getting back to restricting how does race play
15 into that?

16 A. Race in this case I do not use
17 measures of the distribution of race across
18 districts or in gerrymandering, but I understand
19 that in legal and policy battles over
20 gerrymandering the question of whether racial
21 minority groups were targeted to be for example
22 packed or distributed across districts does matter
23 for gerrymandering.

24 Q. Okay. And how do you understand it
25 to matter?

1 A. Well, that historically trying to
2 reduce the influence of racial minorities has been
3 something that political coalitions have tried to
4 do through gerrymandering.

5 Q. Which political course?

6 A. I mean historically all of it so in
7 the pre-civil rights era presumably some other
8 Democratic states. More recently there's a
9 controversy over Republican led gerrymanders, for
10 example in North Carolina and the potential for
11 racial targeting to have played a role in this.

12 Q. Okay. If I understand you correctly
13 the efforts by Republican led legislatures to enact
14 redistricting plans for partisan advantage to the
15 detriment of minorities because there's a high
16 correlation between race and Democratic voting.

17 A. So that's a separate question of now
18 given the racial sorting of the electorate in which
19 most racial minority voters, especially African
20 American voters are in the Democratic party, that
21 partisan gerrymandering against Democrats harms
22 minority voters, that's a separate and legitimate
23 argument but then there's this other arguments
24 about whether the geographic distribution of the
25 racial minority voters go into developing the

1 gerrymandering itself or measuring gerrymandering
2 through its efficient or inefficient geographic
3 distribution of racially minority voters across
4 districts, so there's three separate questions.

5 MS. HULETT: Mike can I interrupt
6 you? We're coming up on the time.

7 MR. KASPER: Sure. I'm sorry.

8 THE WITNESS: I wish I didn't have
9 this.

10 Q. (BY MR. KASPER) I'll finish up this
11 question and then we'll break.

12 I understand you're working on a
13 book, Laboratories Against Democracy.

14 A. Correct.

15 Q. National parties transform state
16 politics.

17 How is the book coming?

18 A. Going great. In the final sort of
19 page proof and copy editing but it is a marathon.

20 Q. And how have national parties
21 transformed state politics?

22 A. So in the past parties were much more
23 local and regional, they were decentralized
24 organizationally and they included much more
25 ideological variations, for example Democrats in

1 the pre-civil rights era included northern labor
2 and pro-civil rights Democrats as well as southern
3 pro segregation Democrats. Now we have nationally
4 coordinated parties where nationally you can tell
5 tremendous amounts of what policy agendas and
6 ideological positions candidates have based on
7 their partisanship in ways you couldn't do before.

8 Q. Okay.

9 MR. KASPER: Why don't we break here?
10 There's not much left to go after this, so.

11 THE WITNESS: I'll see you back in
12 two hours.

13 (WHEREUPON, A RECESS WAS TAKEN BY THE PARTIES).

14 Q. (BY MR. KASPER) Dr. Grumbach, thank
15 you for coming back. I think I'm going to
16 eliminate a lot of what we have left and I have a
17 couple more questions, it's mostly about you more
18 than about your reports.

19 A. Sure thing.

20 Q. Could you tell me when were you first
21 approached about working on this case?

22 A. Some time in the fall, to be honest I
23 would have to check. But potentially late
24 September, early October.

25 Q. Do you remember by whom you were

1 approached?

2 A. It was Denise Hulett and another
3 individual from MALDEF, I believe.

4 Q. And do you know when you agreed to
5 take the case?

6 A. I assume a few days later, maybe even
7 a day later.

8 Q. Okay. Did you do any analysis or
9 research about the case before you agreed to take
10 it?

11 A. No, I did not.

12 Q. And on your CV it indicates that you
13 earned your Ph.D. in political science in 2018?

14 A. That's correct.

15 Q. Is that correct? Okay. And where
16 did you get that? I'm sorry, I forgot.

17 A. University of California Berkeley.

18 Q. Oh, that's right, Berkeley.

19 A. Go Bears.

20 Q. That's right.

21 Have you been at Washington since
22 then?

23 A. No. I did a one year post doctoral
24 fellowship at the Center for the Study of
25 Democratic Politics at Princeton.

1 Q. And your CV also indicates that you
2 participated in one case in the previous four
3 years.

4 A. That's correct.

5 Q. Agular?

6 A. Yakima County v Agular.

7 Q. And what was that case about?

8 A. That was about the county in my, you
9 know, question under study was again racially
10 polarized voting.

11 Q. Which side did you represent?

12 A. I represented the plaintiff's side.

13 Q. And who retained you for that case?

14 A. The Campaign Legal Center, CLC.

15 Q. Okay.

16 A. The individual at that time, Ruth
17 Greenwood.

18 Q. Okay. I know Ruth.

19 That case was in the State of
20 Washington state court, is that correct?

21 A. It was superior court -- to be honest
22 I need to understand more if this was county or
23 state.

24 Q. But it wasn't in federal court.

25 A. That's correct, it was not a federal

1 case.

2 Q. And given that you got your Ph.D. in
3 2018 and you disclosed a case in the last four
4 years is it fair to say that was the only case
5 you've been a witness in?

6 A. That's correct.

7 Q. And you gave a deposition but you did
8 not appear at trial?

9 A. The case was settled prior to the
10 trial.

11 Q. Okay. Fine. And so that's the only
12 case that you've been an expert witness in?

13 A. That's correct. That's the only case
14 I've been an expert witness in aside from this one.

15 Q. And you did analysis for the
16 plaintiff of racially polarized voting?

17 A. That's correct.

18 Q. And what did you conclude?

19 A. In that I can't remember the specific
20 number of elections in my initial report I studied,
21 but all of those featured racially polarized voting
22 and then, and these were for county wide seats in
23 Yakima County and then subsequently in a rebuttal
24 report I analyzed a large number of additional
25 smaller elections for school board and things like

1 that in a meta-analysis as well.

2 Q. And did an analysis of racially
3 polarized voting in those elections?

4 A. That's correct.

5 Q. And this was in Washington State,
6 involved in Washington State?

7 A. Yes.

8 Q. And what racial groups were you
9 analyzing?

10 A. In that case I separated out Latinos,
11 non-Hispanic whites and Native American voters.

12 Q. So unlike in this case you broke down
13 the other.

14 A. That's correct. In that case there
15 was an additional question of what Native American
16 voters voted in coalition with Latino voters.

17 Q. And in that case I presume you didn't
18 break down black voters because there was not a
19 statistically sufficient number of black voters?

20 A. That's true. And additionally in
21 that case, this is a methodological point but
22 Bayesian surname geo coded analysis of races or
23 ethnic background in states that don't provide
24 racial or ethnic backgrounds at the precinct level
25 it is statistically there's less precision on

1 distinguishing African American and non-Hispanic
2 white voters and distinguishing between Latino and
3 non-Latino individuals or Latino and non-Hispanic
4 white individuals.

5 Q. And again could you clarify again for
6 me why you broke down the non-Latino vote?

7 A. Absolutely. I was informed that a
8 key question in that case was whether Native
9 American voters voted in coalition with Latino
10 voters, where in this case I understood the key
11 question was whether there was racial polarization
12 focusing on Latinos versus non-Latino voters.

13 Q. And how did you come to have that
14 understanding?

15 A. In addition with the counsel and the
16 fact that the organization is the Mexican American
17 Legal Defense Fund I sort of focused on Latinos in
18 contrast to non-Latino voters.

19 Q. But do you remember our discussion
20 about the representative district involving Theresa
21 Mah, the Chinese candidate?

22 A. I do remember discussing an election
23 with Theresa Mah.

24 Q. And would an issue about Asian and
25 Latino coalition voting not be relevant in that?

1 A. Not to my understanding in this case,
2 no.

3 Q. But you didn't undertake an analysis
4 to see whether or not that was statistically
5 significant?

6 A. Aside from the question of
7 statistical significance, which I'm not sure
8 applies to this particular question, I did not
9 separate out Asian American voters in that case
10 because I did not have it relevant to the question
11 of Latino's ability to achieve electoral
12 representation through voting in this case.

13 Q. Well that's a different question than
14 polarization, isn't it?

15 A. No. Racially polarized, racially
16 polarized voting and its existence is related to
17 the question of whether a given racial minority
18 group is able to achieve representation through
19 election.

20 Q. Sure. They're related in they both
21 deal with redistricting. As we talked about
22 earlier an election under your analysis could be
23 racially polarized despite the fact that the Latino
24 preferred candidate overwhelmingly wins both
25 groups, right?

1 A. This is true. Racial polarization
2 when two groups can exist even when both groups
3 vote for a candidate in majorities, yeah.

4 Q. Yeah. Or conversely when they both
5 vote overwhelmingly against a Latino candidate.

6 A. Right. I think that's a separate
7 question of whether a Latino candidate is always
8 the candidate of choice of Latino voters and that's
9 not necessarily the case but in this analysis it's
10 a good proxy measure to look in to racially
11 contested elections in that the Latino candidate is
12 likely to be the Latino candidate of choice.

13 Q. Are you working on any other cases
14 now?

15 A. I'm not.

16 Q. So it's fair to say that in the only
17 other case you did this type of work you did break
18 down the other group and you haven't done any
19 district in this case, right?

20 A. It's correct that in the other case I
21 did separate Latino, Native American and
22 non-Hispanic white voters in the analysis.

23 Q. And as far as you know, can you tell
24 me were there any other groups that were included
25 in the non-Native American, non-Latino?

1 A. I'd have to double check but again
2 because of the difficulties in precisely estimating
3 concentrations of African American voters I would
4 say it's not impossible that some African American
5 voters were included in the non-Hispanic white
6 category.

7 Q. But my question is were there enough
8 black voters for it to have mattered?

9 A. I would say probably not.

10 Q. Thank you. I don't have any more
11 questions fr you Doctor, thanks for your time,
12 thanks for your patience.

13 MS. HULETT: I have a few followup
14 questions Dr. Grumbach.

15 THE WITNESS: Okay.

16 EXAMINATION

17 QUESTIONS BY MS. HULETT:

18 Q. You were asked some questions about
19 your estimates of Latino and non-Latino support for
20 candidates in various elections as reflected in the
21 appendix for your initial report. Were those
22 estimates the exact vote counts or do they have a
23 margin within the most precise estimate of vote
24 totals lie?

25 A. Yes, the latter is correct. They are

1 estimates within which I am highly statistically
2 confident that the true, the true individual level
3 voting pattern on average resides.

4 Q. And does the fact that your estimates
5 of Latino or non-Latino support for candidates in
6 some of these races, does the fact that they don't
7 add up to 100 in every case cause you to doubt your
8 estimate?

9 A. No, this does not cause me to doubt
10 my estimates, particularly not on the presence of
11 racially polarized voting in a given election.

12 Q. Why?

13 A. First racially polarized voting
14 again, the difference between racial groups of
15 estimates, regardless of the particular intercept
16 which can lead a total to, you know, to be a number
17 that's distinct from 100, and if indeed there are
18 coding or clerical inclusions of for example
19 Republican primary voter and under counts or over
20 counts, that should introduce measurement error,
21 that should not bias the results. So if anything
22 that should make it less likely to find racially
23 polarized voting. The fact that I do find it in
24 the cases that I do leads me to be highly confident
25 that it indeed exists in those cases.

1 Q. Is the fact, the phenomenon of Latino
2 support for example not adding quite up to 100 in a
3 race, is it correct to call that an error rate
4 statistically?

5 A. No. An error rate would not be an
6 optimal term to use and it's not necessarily an
7 error, whether or not the totals add up to 100, but
8 I would say in the conversation in the earlier
9 deposition I understood it to mean deviations from
10 100 but I do think it's not necessarily accurate to
11 call it an error or an error rate.

12 Q. One of the things that I asked you to
13 do in this case was to respond to Dr. Lichtman's
14 report, correct?

15 A. Correct.

16 Q. Were you able to look at whether Dr.
17 Lichtman's ecological regression estimates for
18 support for candidates added up to more than 100
19 percent for Latino estimates for each race?

20 A. I was not able given the report or
21 the lack of data files available.

22 Q. And were you able to look at whether
23 his ecological regression estimates of support for
24 candidates added up to more than 100 percent for
25 non-Latino voters?

1 A. I was not.

2 Q. And that's because you didn't have
3 the estimates, correct?

4 A. That's correct. I did not have the
5 complete array of estimates for the Latino
6 candidates of choice and their opponents the way I
7 provided for my sample of elections, and
8 furthermore was not able to assess the underlying
9 data or statistical analysis through the provided
10 materials.

11 Q. Were you able to look at whether Dr.
12 Lichtman coded his election data correctly for his
13 ecological regression analysis?

14 A. No, I was not given any code of any
15 form.

16 Q. And why is that important?

17 A. That's important because I cannot
18 assess how the estimates were generated, whether
19 statistical procedures were followed correctly or
20 if statistical procedures were really done at all,
21 that's just limited information for me to assess
22 the quality of those estimates.

23 Q. Do you know what the standard errors
24 were for his estimates?

25 A. I do not know any measures of

1 uncertainty on his estimates, whether standard
2 errors, confidence intervals, basing credible
3 intervals or any other uncertainty estimates.

4 Q. And were you able to see whether Dr.
5 Lichtman's estimate of Asian voter support for
6 example in the election involving Candidate Mah,
7 whether the estimates of Asian voter support in any
8 race were accurate, including that race?

9 A. Here we're referring to the
10 ecological regression estimate.

11 Q. Yes.

12 A. Again, I'm not able to assess the
13 veracity or accuracy, biasness, certainty of any of
14 the estimates given the lack of, well, lack of
15 completeness in reporting estimates but also the
16 lack of underlying data files and code.

17 Q. And at the risk of belaboring a point
18 were you able to determine whether Dr. Lichtman's
19 estimates of white or black voters scores were
20 accurate?

21 A. I was not. I was not able to assess,
22 you know, any of these previous questions we've
23 talked about, whether any totals add up to 100 or
24 deviate from 100, which again is relatively
25 orthogonal to the, whether racially polarized

1 voting exists in the estimates or the accuracy of
2 any given estimate for any racial group.

3 Q. And exactly what would you need in
4 order to replicate Dr. Lichtman's ecological
5 regression analysis in order to determine its
6 accuracy?

7 A. Well, I think, so first this is not
8 to replicate, but first to understand the full set
9 of results on these questions I would need
10 something more akin to the appendix table I
11 provided that have full ethnic and uncertainty
12 measures for every candidate and opponent within
13 the elections under study, but then to replicate
14 that's a specific term in quantitative social
15 science, to replicate results is to obtain code and
16 data or at least data, underlying data in a useable
17 format in which I can produce similar or identical
18 results or negligibly, you know, different results
19 of the estimates in that report.

20 Q. And in the field of social science
21 among your peers is the ability to replicate an
22 analysis in that way considered important?

23 A. Yes. Top leading journals in
24 political science when quantitative analysis is
25 done in a research paper now mandate replication

1 data files for publishing the paper and code files
2 for publishing those papers and also there's a, not
3 as much in political science likely but there is in
4 psychology there is what's called a replication
5 crisis where many prominent studies, quantitative
6 studies, do not replicate closely and the
7 conclusions are then overturned when people look at
8 the data with a new analysis or re-study the same
9 phenomenon.

10 Q. And you, we see in your report that
11 you produced your estimates and the standard errors
12 around those estimates. Did you also produce code
13 and electoral data?

14 A. Technically I provided a code script
15 file and then the underlying electoral data, yes.

16 Q. Okay. I want to turn just for a
17 moment, I just have a couple of more questions.
18 This is about proportionality. In your initial
19 report at page 17 you, the section I think is
20 called Direct Descriptive Representation, or at
21 least this is what the section was about,
22 descriptive representation of the Illinois General
23 Assembly and you comment regarding the percent of
24 Latino current representation among legislators in
25 the Illinois assembly currently.

1 A. That's correct.

2 Q. In that analysis you were responding
3 to Dr. Lichtman's claim about the current
4 representation of Latinos in the assembly, correct?

5 A. So in this initial report I was not
6 responding to Dr. Lichtman's reports.

7 Q. I don't mean to his reports but to
8 his claims he made previously in testimony about
9 the current representation in Latino, I mean in the
10 Illinois assembly.

11 A. Yes. And in general I wanted to, my,
12 you know, independently analyze the representation
13 of Latinos compared to their citizen voting age
14 public or presence in the potential electorate.

15 Q. In that location in your initial
16 report and in the section that addresses the same
17 thing in your rebuttal report which is the third
18 full paragraph at page 4 of your rebuttal report,
19 you weren't making a legal or a factual conclusion
20 regarding the proportionality of Latino speed back
21 majority districts within Illinois, were you?

22 A. This is correct. As I responded I
23 believe to Mr. Kasper earlier, this for me was not
24 a legal question but rather a descriptive question
25 quantitatively of what is the relationship between

1 a Latino voting eligible population in Illinois and
2 their presence in the Illinois General Assembly.

3 Q. My last question, you weren't
4 offering an opinion regarding the proper legal
5 measure of proportionality, correct?

6 A. That is correct.

7 Q. All right. That's all I have.

8 MS. HULETT: We'll read and sign.

9
10
11 (Whereupon, the deposition concluded at 2:21 p.m.)
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REPORTER CERTIFICATE

I, SUZANNE BENOIST, Certified Shorthand Reporter, do hereby certify that there came before me via Zoom, the above-referenced parties, that the proceeding was translated and proofread using computer-aided transcription, and the above transcript of proceedings is a true and accurate transcript of my notes as taken at the time of said event.

I further certify that I am neither attorney nor counsel for nor related nor employed by any of the parties to the action in which this examination is taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in this action.

Dated this 3rd day of December, 2021.

A handwritten signature in black ink, appearing to read "Suzanne Benoist", is written over a horizontal line. There are two small dots below the line.

Ms. Suzanne Benoist, RPR,
CCR-MO, CCR-KS, CSR-IL, CSR-IA
Notary Public No. 07541281
State of Missouri - Jefferson County
My commission expires: 5/10/2024

1 I declare under penalty of perjury
2 under the laws that the foregoing is
3 true and correct.

4
5 Executed on _____, 20____,
6 at _____, _____.

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11 _____
12 JACOB M. GRUMBACH, Ph.D.
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RE: CONTRERAS vs. ILLINOIS STATE BOARD OF ELECTIONS
JACOB M. GRUMBACH, Ph.D. (JOB NO. 4969979)

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JACOB M. GRUMBACH, Ph.D. Date

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[democratic - diversity]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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