Evaluating Look Ahead America's 'The Georgia Report' on Illegal, Out-of-State Voting in the 2020 Election

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Note: On July 30th the authors of the Georgia Report posted a revised version of their report online in response to a draft of this memo we sent them. The revised version quibbles unconvincingly with the three arbitrarily chosen example cases we use for expository purposes below while doing nothing to respond to the core methodological issues we have identified. As such, the Georgia Report remains fatally flawed and unreliable.

1   Overview and Summary

- In this memo, we evaluate the methods used in Look Ahead America's April 19th, 2021 report, "The Georgia Report," on illegal voting in Georgia in the 2020 election. The Georgia Report is among the most-cited pieces of evidence offered to support the claim that there was widespread fraud in the 2020 election.

- We conclude that the methodology employed in the Georgia Report to detect illegal, out-of-state voting cannot establish any conclusive cases of fraud, and is likely to overstate the rate of this form of fraud (see pages 4 through 10).

- Establishing that individuals moved out of Georgia according to the National Change of Address database and subsequently voted in Georgia is not sufficient to establish fraud;

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many of these individuals may have not actually left the state until after the election, left the state temporarily, or left but returned before the election. The Report's methodology is fundamentally incapable of distinguishing these legitimate cases from supposed fraud (see pages 5 through 8).

- The statistical method the Report uses to extrapolate from a small number of specific allegations to a large total number of cases of supposed illegal out-of-state voting is unsound and likely to overestimate the rate of fraud due to the manner in which the Report's manual assessment of cases violates random sampling (see pages 8 through 10).

- The Report's findings do not meet scientific standards of evidence and should not be used as the basis for any claims about rates of voter fraud or its role in the outcome of the 2020 election.

2 Background

The Georgia Report focuses on two types of illegal voting in Georgia in the 2020 election: voters alleged to have registered illegally at locations that are not residences, and voters alleged to live in other states but to have cast votes illegally in Georgia.

- The Report alleges 10,651 cases of illegal voting by people it claims have moved out of state prior to the election according to the National Change of Address database (NCOA);

- It alleges 4,926 cases of illegal voting for people alleged to have moved out of state and registered in another state according to a nationwide voter registration database, for a total of 15,577 cases of alleged illegal out-of-state voting;

- Finally, it alleges 1,056 cases of illegal voting due to illegal registrations.

Because the vast majority of the alleged cases concern illegal out-of-state voting, we focus our evaluation on this issue. In addition to evaluating the written report (April 19th version), we also obtained the underlying data from the authors of the Report.

3   Georgia Report Methods and Procedure for Estimating Out-of-State Voting

To produce the estimate of 10,651 out-of-state votes, the Report combines an automated matching procedure with manual inspection. The researchers use a vendor to match all voters who cast an early or absentee ballot to records from the National Change of Address (NCOA) system from the USPS for people who filed for permanent out-of-state moves from Georgia within the last four years prior to the election, omitting people who filed for their move after October 1, 2020.[1]

This initial match with the NCOA produces 15,700 matches to voters who cast a ballot in the 2020 election. Information about whether voters appear in the Florida drivers license database was also included. Acknowledging that an NCOA match alone is insufficient to establish an illegal out-of-state vote, the authors then took a random sample of 1,000 voters for further investigation, searching online to find social media profiles and other potential indicators of individuals' locations

However, only 334 of these 1,000 cases are actually analyzed. Ultimately, the authors provided a determination of "confirmed out-of-state voting", "confirmed in-state voting", or "undetermined" for 334 cases, leaving 666 unanalyzed.[2] Neither the Georgia Report nor the supplied dataset provides a procedure for determining which voters would be investigated and which were not.

To extrapolate these findings to the full set of potential matches, the Report computes the rate of fraud using only the voters who were either "confirmed out-of-state voting" or "confirmed in-

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[1]While the Georgia Report claims that the NCOA only maintains records for three years, it actually maintains records for four years. The oldest matches in the Georgia Report data are from November, 2016.

[2]An additional 103 voters receive a note in a field described as "note" but with no determination made in the data.

state voting". This computation is :

$$
\begin{aligned}
\text{Rate of Fraud} \quad &= \quad \frac{(\text{\# confirmed out-of-state votes})}{(\text{\# confirmed out-of-state votes} + \text{\# confirmed in-state votes})} \\
&= \quad \frac{154}{(154 + 73)} \\
&= \quad 0.6784141
\end{aligned}
$$

Multiplying this rate by the total number of potential matches, 15,700, the Report arrives at its estimate of 10,651 illegal out-of-state votes detected via the NCOA merge. The authors offer a margin of error of 6.2%. To calculate this the authors compute,

$$
\text{Margin of Error} \quad = \quad 2 \times \sqrt{\frac{(0.6784141 \times (1 - 0.6784141))}{(154 + 73)}}
$$

As we explain below, neither the rate of out-of-state voting nor the margin of error are justified by the random sampling of 1,000 cases, since only a selected subset of the cases were analyzed.

4 Evaluating the Out-of-State NCOA Voter Analysis

We conclude that the NCOA-based method is not scientifically sound. The Report argues that Shaw, Ansolabehere and Stewart (2015) justifies the use of the NCOA to identify voters who have illegally voted from another state, but this is mistaken. The referenced study justifies matching to the NCOA as part of a broader strategy for performing "list maintenance," a process by which voters who have moved out of state or died are removed from state voter registration systems. Tentatively removing a voter from the voter file is very different from alleging that that voter illegally voted, and requires a much lower standard of evidence. The Shaw et. al. study in no way supports the idea that matching to the NCOA is a scientifically valid way to detect voter fraud.

More specifically, two key issues prevent the Report's method from providing credible estimates of the rate of illegal out-of-state voting:

1) **The Report's method for finding cases of illegal out-of-state voting based on the NCOA database cannot establish that any individual has actually voted illegally, because it has no way to observe whether these individuals were eligible to vote in Georgia as of Election Day or not.**

2) **The statistical method the Report uses to extrapolate from the 154 specifically alleged cases to arrive at an estimate of 10,651 cases is scientifically unsound and is biased towards finding more cases of fraud.**

We now explore each of these issues in turn.

Issue 1: The Report's method for finding cases of illegal out-of-state voting based on the NCOA database cannot establish that any individual has actually voted illegally, because it has no way to observe whether these individuals were eligible to vote in Georgia as of Election Day or not.

Of the 154 total "confirmed" cases of illegal out-of-state voting in the Report, 105 are considered confirmed using additional online links (usually social media profiles) suggesting the person is located out of state.

Even leaving aside potential errors in the linking process to NCOA, there is simply no way to conclude that a person who filed an out-of-state change-of-address form has not maintained or re-established Georgia residency, and there is virtually no way for social media profiles or other online sources to verify an individual's residency status as of Election Day.

In addition to out-of-state military service, which the Report does consider, some of the most important other potential reasons someone might file a permanent out-of-state move and yet still be eligible to vote include:

- Someone is in the process of moving, but has not yet actually moved as of Election Day;

- Someone did move, but then moved back home before Election Day;

- Someone went out of state temporarily to visit family or care for a sick family member, especially during COVID;

- Someone left the state on a temporary business assignment;

- Someone left the state to visit a vacation property;

- Someone is a student residing out of state for their studies.

To see this general issue, consider a case we arbitrarily selected from the Report's underlying data that is coded as a confirmed case of out-of-state voting. The case concerns an individual who matches to NCOA for moving out of state. In this case, the Report's evidence for confirming it as an illegal vote is based on several online links that suggest the individual offers business services in another state.

There is no way to rule out that this person temporarily moved out of state, perhaps for business reasons during COVID, and either returned to Atlanta prior to the election or never gave up Atlanta residency. Indeed, Georgia law specifically cites temporary moves for out-of-state business as an instance in which a person does not lose their residency status (see O.C.G.A. 21-2-217 §2 (2010)).

Moreover, the individual's social media profile still reports Atlanta as his or her location, and in our own search of Atlanta property records, we found that the individual has continuously owned a condo in Atlanta since many years prior to the 2020 election. Did this person actually commit voter fraud? Or is it more likely that they temporarily conducted business in another state without giving up their residency? The Report cannot distinguish these possibilities, and there is no scientific basis for concluding that this case is a confirmed case of fraud.

As a second example, consider another case that the Report codes as confirmed out-of-state voting based on a match to NCOA. In this case, the individual in question is a Masters student in another state, and the requested address change is to a location near his or her Masters program. The Report considers this a case of illegal voting; the only evidence offered is the individual's LinkedIn profile and Facebook profile, both of which indicate that the individual is located in

another state, but neither of which offers any evidence that the individual is not eligible to vote in Georgia as a student. Indeed, Georgia law specifically cites moving out of state for educational purposes as a case in which the individual need not give up Georgia residency (see O.C.G.A. 21-2-217 §8 (2010)). It seems far more likely that this individual voted legally than illegally, yet the Report calls this a "confirmed" case of illegal voting.

Out of 154 cases the Report identifies as confirmed fraud, the remaining 49 involve both a match to NCOA and a match to the FL drivers license database. A person must be a Florida resident to obtain a driver's license, but simply appearing in the FL drivers license database does not mean the voter is still a Florida resident—there is nothing to rule out that any such person has moved back to Georgia at any point since getting their Florida license. Since Georgia does not have a minimum length of residency necessary to vote, this residency could be established in a very short period that would be very hard to observe in public records.

In addition to not establishing conclusive evidence of fraud, the FL drivers license records may induce additional error into the analysis. Consider a final example that the Report identifies as out-of-state voting using the Florida records. The evidence offered is that the individual matched to the Florida drivers license database and that the individual is marked as having voted in Florida. Yet, the individual found in the Florida voter records has a birthdate six months apart from the person in the Georgia voting records. The individual in the Florida voting records also lives in a city 450 miles away from the city where the Georgia voter is said to have forwarded their mail. Is this a real case of fraud? Or simply an error in the Report? It is impossible to say for sure; yet it is clearly impossible to conclude that this is a "confirmed" case of illegal voting.

In general, like in these examples, no scientific method exists to use online searches to determine whether a person was or was not eligible to vote in Georgia on election day. We cannot conclude that any of the above examples, or any of the other 154 "confirmed" cases in the Report, are fraud; nor can we conclude that they are not fraud. The method offered simply cannot make any determinations. Even if our goal was to roughly assess the overall amount of fraud, and not to confidently assess any specific case, the Report's method is not nearly precise enough to be

useful, as we will now explain.

Issue 2: The statistical method the Report uses to extrapolate from the 154 specifically alleged cases to arrive at an estimate of 10,651 cases is scientifically unsound and is biased towards finding more cases of fraud.

When calculating the estimated rate of out-of-state voting, the authors only included cases where a determination of either "confirmed in-state voting" or "confirmed out-of-state voting" was made, omitting 773 of the 1,000 sampled cases from the calculation. By omitting these cases, this extrapolation strategy implicitly assumes that cases in which the researchers chose not to make a determination are no more likely to be cases of legitimate voting than the cases in which the researchers chose to make a determination.

If the researchers lean towards confirming cases of out-of-state voting but lean towards leaving cases of in-state voting as undetermined, then this assumption is violated. Since all of the individuals in the dataset lived in Georgia at some point, it is much easier to find online evidence that an individual spent some time in another state than to prove that they never left or returned prior to Election Day. Most online sources that reflect people living in Georgia will not help distinguish cases where the person never left from cases where the person left temporarily but returned.

Consistent with this concern, cases in the Report are often "confirmed" as out-of-state voting on the basis of social media profiles mentioning the new state the individual moved to at some point, but almost no cases are confirmed as in-state voting on the basis of social media profiles mentioning Georgia as the individual's location.

In technical terms, by conditioning on the ability to make a determination in the analysis, the Report breaks the random sampling that justifies their extrapolation, potentially making their reported estimate of 10,651 a very large overestimate even if we were to accept the 154 manually identified cases as being true cases of illegal out-of-state voting (Freedman, Pisani and Purves, 2007, 333).

Another way to see this issue is to see that the overall estimate of 10,651 depends both on the 154 cases the authors specifically allege to be illegal votes, and the 73 cases they conclude are not fraud. If the authors had found more confirmed cases of non-fraud, the denominator in the above calculation would increase, the rate of fraud would go down, and the estimate extrapolated to the entire sample would shrink.

The pattern of "confirmed" cases of in-state voting in the Report strongly suggests that the methodology is systematically under-counting valid cases of in-state voting. Of the 73 cases of "confirmed" in-state voting, 58 are counted as confirmed because the individual is in the military, and members of the military are permitted to vote in Georgia while stationed in other localities. As we discussed above, however, there are many other reasons individuals could file a change of address for another state yet remain eligible to vote in Georgia—while it would be reasonable to expect these other explanations in total to be more common than military service, almost zero cases of these other explanations are ever detected by the Report's methodology.

To see through an example how this issue affects the estimate, imagine that there are as many eligible in-state votes among non-military individuals as the Report finds among members of the military. This would reduce their estimate of illegal out-of-state voting from 10,651 to 8,955.[3] Imagine there were four times as many eligible in-state votes among non-military individuals; now the estimate would fall from 10,651 to 6,264. If there were 10 times as many, which is entirely plausible, the estimate would fall to 3,924. Just like we have no way to determine if any of the Report's "confirmed" cases are actually illegal out-of-state votes, we have no way of assessing how many of the Report's non-confirmed cases should be confirmed eligible votes; the point is that the Report has no way of assessing this, and yet its final estimate of the rate of fraud depends critically on this number.

To further explore this issue, we can use a technique from statistics known as Manski bounding, in which we assess the possible rate of fraud by imputing values for all of the unconfirmed cases to generate the most extreme possible values of the estimated rate of illegal out-of-state

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[3]The calculation is: $(154)/(154 + 58 \times 2) \times 15,700 = 8,955$.

voting (Manski, 1990). In this case, this means supposing that all of the unconfirmed cases are cases of illegal voting, to get the upper bound, and supposing that they are all legitimate voting, to get the lower bound.

The Manski bounds for the estimate are: a lower bound of 2,418 cases of out-of-state voting ($\frac{154}{1000} \cdot 15,700 \approx 2,418$), and an upper bound of 14,544 cases ($\frac{154+773}{1000} \cdot 15,700 \approx 14,544$). This suggests an extreme level of uncertainty, and it is critical to emphasize that the Manski bounds assume that the Report's codings were done correctly, and so are not a method for evaluating the overall reliability of the Report's analysis; rather, the bounds show how uncertain the Report's resulting estimate is even if we were to stipulate to their evaluations of all of the confirmed cases.

Even if one were to accept the Report's manual confirmations of cases of fraud—and as we emphasize above, the available evidence means there is no scientific reason to do so—using this small number of cases to attempt to estimate a total number of cases induces a very large degree of statistical uncertainty that makes it impossible to rely on the Report's estimate of 10,651 cases of illegal out-of-state voting.

5 Evaluating the National Voter Registration Database Analysis

As we mentioned, the Report also investigates people they suspect of casting ballots in Georgia and another state in the same election, known as double voting. Many of the errors we identified with their analysis of out-of-state voting using the NCOA database also apply to their analysis of double voting. The procedure they use to identify suspects and confirm illegal double votes is scientifically unsound.

The authors flag cases they believe are illegal double voting in three steps:

1) Obtain the birthdate of every Georgia voter from third-party vendors.

2) Identify Georgia voters who share a name and birthdate with someone who voted in an-

other state according to a national voter file obtained from a third-party vendor.

3) Using internet and database searches, investigate whether the Georgia voter is the same individual who voted elsewhere. (Use a random sample of 1,000 suspected double voters for this exercise).

Step 3 uses the same flawed statistical method we critiqued above (see Issue 2). As we discussed above, this procedure is more likely to find solid information about voters who moved out of state than voters who stayed in Georgia. If a Georgia voter moved to another state, they are likely to leave a digital footprint in that other state, allowing an outside analyst to confirm that they moved. Using publicly available information, it is harder to confirm that a voter remained a legal resident of Georgia because evidence that they were employed or lived in Georgia does not confirm that they maintained residence until election day. The Report implicitly assumes that solid information is equally available for movers and stayers by extrapolating from the cases with solid information to those where they cannot find solid information. Out of the 1,000 cases the authors randomly sampled, they find 29 cases they feel comfortable confirming as double votes and 141 they accept as people who happen to share a name and birthdate with someone voting out of state but did not themselves vote twice leaving 830 they cannot confirm either way. The authors sampled the 1,000 cases they evaluated from a list of 4,926 potential cases.[4] The Manski bounds for the number of double votes are then 143 ($\frac{29}{1000} \cdot 4,926 \approx 143$) to 4,231 ($\frac{29+830}{1000} \cdot 4,926 \approx 4231$), a level of uncertainty that substantially limits the conclusions anyone can draw from this analysis.

In discussing the statistical issues with Step 3, we stipulated that "confirmed" double votes were true double votes. Yet, Step 3 uses the same low standard of evidence for confirming a case of double voting which we describe in detail above when discussing illegal out-of-state voting. Refer to that section for a discussion of the types of confirmation we find unconvincing.

The Report assumes in step 2 that if a voter in Georgia shares a name and birthdate with a voter in any other state, that Georgia voter cast two ballots. The Report correctly states that

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[4]The data that the authors provided us contain only 4,611 cases. We use the larger number of cases they report in the interest of consistency.

Ansolabehere and Hersh (2017) finds only 0.4% of Texas voters shared a name and birthdate with another Texas voter in 2016, but this is misleading for two reasons. First, while 0.4% sounds like a very small number at first blush, it is actually so large that, if 0.4% of Georgia voters share a name and birthdate, all of the all of the cases that the Georgia Report identifies as fraud are very likely to be two people with the same name and birthdate rather than one person who cast two ballots. More than 4,900,000 ballots were cast in the 2020 election in Georgia. If 0.4% of these ballots were cast by people who, just by accident, share a name and birthdate with someone else, the procedure used in the Report would incorrectly conclude that 19,742 ($19,742 = 4,900,000 * 0.004$) people voted twice when in fact they simply shared a name and birthdate with another voter. In reality, the Report identifies 4,926 votes where the voter shares a name and birtdate with another voter, meaning that, even if the percentage of voters who share their name and birthdate with another voter is only 0.1%, a much lower rate than was found in Ansolabehere and Hersh (2017), it is still likely that nearly all of the cases the Report identifies are false positives. Second, Ansolabehere and Hersh (2017) compute the number of non-unique name and birthdate combinations using a list of 7.9 million Texas voters. While Georgia had fewer than 7.9 million voters in 2020, more than 150 million ballots were counted in states outside of Georgia. This massive pool of voters outside of Georgia likely raises the chance higher than 0.4% that a Georgia voter will have the same birthdate and name as a non-Georgia voter just by chance. Finally, Step 1, in which the authors obtain the birthdate of Georgia voters through another step of record linkage, introduces additional opportunities for Georgia voters to be linked with the record of someone who shares their name but has a different birthdate. The Report does not provide enough information about the third-party record linkage procedure for us to scale the magnitude of this bias, but it will tend to reduce the quality of the linkages and increase the number of false positives.

While this is not direct evidence against the Report's claim, Georgia's procedure for managing voter lists casts doubt on the Report's finding that many Georgia voters cast ballots in other states. Georgia partners with the Electronic Registration Information Center (ERIC) (link) to remove citizens from the voter file when they move to another state. ERIC has access to Georgia's private

data on birthdates and social security numbers and the same data from other states. The Report does not have this data which is why they use the less reliable approach of adding birthdates from a third-party vendor and searching for suspected double voters in public records and internet searches.

6   A Scientifically Rigorous Way to Evaluate Illegal Out-of-State Voting

We have concluded that Look Ahead America's 'Georgia Report' is not based on scientifically sound methods and cannot be used as a credible basis for concluding that there was a large and meaningful amount of illegal out-of-state voting in Georgia in 2020. What, then, would a scientifically sound study look like?

We believe that a sound study could start from the same approach as the Georgia Report: find the universe of individuals who voted in Georgia and who matched to the NCOA prior to the election. Starting from this data, a credible study would:

1) Randomly sample a large number of cases from this dataset

2) Perform a much deeper investigation of each sampled case, relying not on online sources but on direct proof of someone's voter eligibility as of election day. Understanding someone's eligibility as of election day requires in-depth knowledge of the individual's circumstances and intentions; hence, determining eligibility would likely require interviewing each individual in question, and given the sensitivity, can probably only be performed by official state actors, though it could be monitored by third parties for transparency.

3) Arrive at a determination for every case in the sample, not just some of them.

4) Extrapolate from the rate of confirmed illegal out-of-state voting in the sample to the full set of cases, presenting standard measures of statistical uncertainty as well as providing Manski bounds.

The cost of performing such a study would be very high. Because the number of such votes very likely to be fewer than the 10,651 cases the Georgia Report alleges, because this number is, even so, already below the state's margin of victory, and because we would not expect anywhere near 100% of these alleged votes to have been cast for the winning candidate, such a report is unlikely to be justified. Nevertheless, these are the contours of what a credible investigation which avoids the fatal errors of the Georgia Report would have to look like.

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