Mortality, Incarceration, and African American Disenfranchisement in the Contemporary United States

David Cottrell¹, Michael C. Herron¹, Javier M. Rodriguez², and Daniel A. Smith³

Abstract

On account of poor living conditions, African Americans in the United States experience disproportionately high rates of mortality and incarceration compared with Whites. This has profoundly diminished the number of voting-eligible African Americans in the country, costing, as of 2010, approximately 3.9 million African American men and women the right to vote and amounting to a national African American disenfranchisement rate of 13.2%. Although many disenfranchised African Americans have been stripped of voting rights by laws targeting felons and ex-felons, the majority are literally “missing” from their communities due to premature death and incarceration. Leveraging variation in gender ratios across the United States, we show that missing African Americans are concentrated in the country’s Southeast and that African American disenfranchisement rates in some legislative districts lie between 20% and 40%. Despite the many successes of the Voting Rights Act and the civil rights movement, high levels of African American disenfranchisement remain a continuing feature of the American polity.

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Introduction

There is a dramatic gap in living conditions in the United States between Whites and African Americans. The latter are disproportionately poor (Meyer & Wallace, 2009), less healthy (Orsi, Margellos-Anast, & Whitman, 2010), receive less education (Jencks & Phillips, 1998), face greater barriers to success in the labor market (Fairlie & Kletzer, 1998; Fryer, Pager, & Spenkuch, 2013), are imprisoned at greater rates (Alexander, 2012; Hero, 2007), and ultimately die younger (Geronimus, Bound, & Colen, 2011; Geronimus, Bound, Waidmann, Hillemeier, & Burns, 1996). As of 2010, such deleterious living conditions have caused an excess 2.74 million voting-age African American men and women to be “missing” from their communities due to premature death and incarceration. In conjunction with an excess 1.17 million African Americans who have been released from prison yet are not allowed to vote on account of laws restricting the rights of ex-felons, we estimate that, were African American and White living conditions equivalent across the United States, approximately 3.9 million more African Americans would have been enfranchised as of 2010. This amounts to an effective African American disenfranchisement rate of 13.2%.

This result is not a characterization of the pre–Voting Rights Act South, where legal barriers to African American electoral participation were overt (Kousser, 1974). Rather, the disenfranchisement we study here is more subtle and results from African American living conditions per se. As we show, contemporary African American disenfranchisement is woven into states, congressional districts, and state legislative districts, both upper and lower, throughout the United States.

Our contributions are twofold. First, we count disproportionately disenfranchised African Americans in the contemporary United States; these African Americans would have been enfranchised in the country were there no gap between African American and White living conditions. Second, we build on Rodriguez, Geronimus, Bound, and Dorling (2015) by locating disenfranchised African Americans in counties, congressional districts, and state legislative districts. Voting is inherently a local activity, and any assessment of the consequences of African American disenfranchisement must contend not only with how many African Americans are disenfranchised overall in the United States but also where these disenfranchised African Americans live—or, in the case of missing African Americans, where they would live if they...
were neither deceased nor incarcerated. To this end, we offer a model that uses gender ratios to distribute disenfranchised African Americans across the United States. The model assumes that the locations in the United States with the most skewed gender ratios—meaning, places where the ratios of men to women differ drastically between Whites and African Americans—are those where African American “missingness” is most severe.

Below, we review current debates on voting rights and contemporary African American living conditions and describe how we count the number of disenfranchised African Americans in the United States. We then present results on African American disenfranchisement across states, congressional districts, and state legislative districts. Our final section concludes with suggestions for future research on African American political participation and with an implicit call for reexamining the notion of disenfranchisement.

**Voting Rights and Disenfranchisement**

Who has the right to vote? This question has bedeviled the United States since its founding and continues to do so today (Hasen, 2012; Keyssar, 2000; Wang, 2012). All nonincarcerated adult citizens are now legally enfranchised in the country, although there are exceptions in some states of ex-felons and those adjudged mentally incompetent (Manza & Uggen, 2006; Schriner, Ochs, & Shields, 2000). Beyond formal mechanisms of incarceration, the country has witnessed debates as to whether requirements for voter identification (Barreto, Nuño, & Sanchez, 2009; Bentele & O’Brien, 2013; Rocha & Matsubayashi, 2014), congested precincts (Herron & Smith, 2015; Mukherjee, 2009), and difficult registration procedures (Herron & Smith, 2013; Wolfinger & Rosenstone, 1980) are so onerous that they can be thought of disenfranchising.

Much of the literature on voting rights in the United States, not to mention the majority opinion in *Shelby County v. Holder* (2013), draws attention to the progress that African Americans have made since the 1960s. Nonetheless, due to disparities in White and African American living conditions, a disproportionate number of African Americans have died prematurely or are imprisoned. “Disproportionate,” here, refers specifically to deceased or incarcerated African Americans who would be alive and free to vote, respectively, were African American and White living conditions equivalent. African Americans who are not in their communities due to disproportionate death or incarceration—but who would be alive and in their communities if African American living conditions were equivalent to White conditions—are said to be *missing.*¹ Missing African Americans cannot vote.² Beyond those missing is a second group of African Americans who
have been disproportionately disenfranchised by state laws directed at formerly incarcerated individuals. These individuals cannot vote because they reside in states where voting rights are restricted for ex-felons.

All African Americans who would have been at least 18 years old as of 2010, but who had nonetheless died prior to this year, could not vote in 2010. However, it does not follow that all these deceased African Americans are disenfranchised anymore than it implies that all deceased Whites (or deceased Hispanics, or deceased Native Americans, etc.) are disenfranchised. Rather, only the deceased African Americans who in 2010 would have been alive in that year, had African American living conditions been equivalent to White living conditions, can be said to be disproportionately disenfranchised. Similarly, of ex-felon African Americans whose voting rights are abridged, there is a set therein whose rights would not be so abridged were African American living conditions equivalent to White conditions. It is only these nonmissing African Americans who we say are disproportionately disenfranchised by ex-felon voting laws.3

There is an extensive literature on race and politics, which considers the effect of living conditions on present and living, nonmissing, African Americans. Many studies analyze how living conditions affect African American turnout rates (e.g., Piven & Cloward, 2000; Rusk & Stucker, 1978; Wolfinger & Rosenstone, 1980) and levels of political engagement (Squire, Wolfinger, & Glass, 1987; Teixeira, 1987). A related line of research examines African American turnout as a function of the racial composition of electoral districts (e.g., Fraga, 2016; Gay, 2001). Beyond turnout, African Americans are less likely than Whites to possess underlying documentation needed to provide proof of citizenship to register to vote (Barreto, Nuño, & Sanchez, 2007) and are more likely to be required to cast provisional ballots (Kimball & Foley, 2009). Not only are African American electoral experiences different from those of Whites (e.g., Herron & Smith, 2012), numerous scholars have found significant differences between African Americans and Whites in terms of policy preferences (e.g., Gilens, 2005; Kinder & Sanders, 1996; Tate, 1993; Tesler & Sears, 2010), even beyond social welfare and race-related policies (e.g., Abrajano & Poole, 2011; Mendelberg, 2008).4

In terms of the direct effect of missingness on African American political life, there is a growing literature on incarceration and African American electoral participation. A prominent example is Alexander (2012), who argues that incarceration rates in the United States of African American men, in particular, are effectively removing a large segment of the African American population from society in a way redolent of Jim Crow. The penal consequences of what Murakawa (2014) calls the “carceral
state”—institutions of punishment and surveillance—are extensive and reach well beyond the walls of those who are incarcerated. Lerman and Weaver (2014) document the lives of so-called “custodial citizens,” focusing particularly on the “structural disadvantage and racialized poverty” of African Americans (p. 169). The representational implications of excessive African American imprisonment are real; Burch (2012), for example, argues that Florida’s ex-felon disenfranchisement laws, which disproportionately affect African Americans, helped swing the disputed 2000 presidential election in favor of George W. Bush.

With this as background, we build on Rodriguez et al. (2015), who identify approximately 2.7 million prematurely deceased African Americans between 1970 and 2004, of whom 1.7 million would have been of voting age in 2004, contributing 900,000 and 100,000 votes to the Democratic and Republican candidates, respectively, in the 2004 General Election. Rodriguez et al. argue that at least seven senate and 11 gubernatorial elections around 2004 would have shifted from a Republican victor to a competing Democrat. Our contribution here extends Rodriguez et al.’s line of reasoning into 2010 and introduces a model that allows us examine substate jurisdictions, thus providing insight into how missing African Americans are connected to political environments—such as congressional districts—that are key to American democracy.

In summary, the fundamental question underneath Alexander (2012); Uggen, Shannon, and Manza (2012); Rodriguez et al. (2015); and our research is, what is the aggregate effect of African American living conditions on the political landscape of the United States? Explicitly, we want to know how many African American individuals would be enfranchised if contemporary African American and White living conditions were equivalent and which political geographies are most affected by African American disenfranchisement.

Counting and Allocating Disenfranchised African Americans

We now describe how we count the number of disproportionately disenfranchised African Americans in the United States as of 2010 and allocate these African Americans to states, congressional districts, and state legislative districts. Counting and allocating are distinct: We want to know the total number of African Americans who could vote in the absence of a gap in African American and White living conditions and where they could hypothetically cast ballots. Throughout our analysis, we assume that African American living conditions precede disenfranchisement.
Determining where disenfranchised African Americans are located requires that we identify where missing African Americans would have lived if they were not missing. With particular attention to African Americans missing on account of being incarcerated, if we were able to identify the preimprisonment communities of these individuals, we would be able to locate them where they would have lived, were they not incarcerated. However, identifying in preincarceration locations of incarcerated African Americans is not, in general, possible because neither states nor the federal government publishes prior addresses of the individuals whom they have incarcerated.5

**Missing African Americans and Gender Ratios**

How might we know when a location in the United States has missing African Americans? Typical measures of populations count people who are present in localities—not individuals absent on account of premature death or incarceration. Our answer to this conundrum lies in gender ratios. Other scholars have exploited gender ratios in studies of missing populations (e.g., Oster, 2005; Sen, 1992), and gender ratio–based research is anchored in the premise that skewed gender ratios are often indicative of missing individuals.

In the United States, the male–female gender ratio at birth is approximately 1.05 and, among African Americans, 1.02 (Branum, Parker, & Schoendorf, 2009). However, boys and men tend to die and become incarcerated at greater rates than girls and women, respectively, and thus, male–female ratios for nonincarcerated individuals beyond adolescence tend to favor females.6

Table 1 reports for individuals aged 18 and older the nonincarcerated male–female ratio in the 20 most heavily African American counties in the United States (data are from the 2010 Census). Among Whites in these counties, the gender ratio lies typically somewhat below one, and thus, women somewhat outnumber men among nonincarcerated Whites who are at least 18 years of age. With respect to African Americans, though, women heavily outnumber men. The African American gender ratios in Table 1 are all lower than corresponding White ratios, and gaps between African American and White gender ratios are sizable. In Cook County, Illinois, which includes the city of Chicago, there are only 76 nonincarcerated men of age at least 18 for every 100 comparable women; the relevant number of White men is 93.

Race-based differences in gender ratios are apparent at levels well below that of the county. For example, Figure 1 describes gender ratios across 13,567 census blocks in the city of Baltimore, Maryland, the site of Freddie arrest and subsequent death in 2015, an incident that focused public attention
on racial disparities and African American living conditions. The figure’s solid black line smooths gender ratios as block population becomes increasingly African American, showing that, the more African American the population of a block, the more it is female dominated. Baltimore blocks that are entirely White have populations that are almost 50% male, whereas blocks that are entirely African American have populations around 43% male.

Table 1 and Figure 1 are evidence of African American male missingness. As a thought exercise, one might infer the number of missing African American males in Cook County, Illinois, based on equating White and African American gender ratios. According to the 2010 Census, Cook County had 527,867 nonincarcerated African American women and 399,833 nonincarcerated African American men. African American men are, therefore, 77% of African American women, far fewer than the 93% ratio of White men to White women. If one were to add 87,283.5 African American men to Cook County...

### Table 1. Nonincarcerated Gender Ratios Among Counties with the Largest African American Populations, Individuals Aged 18 and Above.

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>White</th>
<th>African American</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Illinois</td>
<td>Cook</td>
<td>0.92</td>
<td>0.76</td>
</tr>
<tr>
<td>2 New York</td>
<td>Kings</td>
<td>0.92</td>
<td>0.72</td>
</tr>
<tr>
<td>3 California</td>
<td>Los Angeles</td>
<td>0.99</td>
<td>0.82</td>
</tr>
<tr>
<td>4 Texas</td>
<td>Harris</td>
<td>0.96</td>
<td>0.81</td>
</tr>
<tr>
<td>5 Michigan</td>
<td>Wayne</td>
<td>0.94</td>
<td>0.80</td>
</tr>
<tr>
<td>6 Pennsylvania</td>
<td>Philadelphia</td>
<td>0.92</td>
<td>0.74</td>
</tr>
<tr>
<td>7 Maryland</td>
<td>Prince George’s</td>
<td>1.00</td>
<td>0.80</td>
</tr>
<tr>
<td>8 Texas</td>
<td>Dallas</td>
<td>0.93</td>
<td>0.78</td>
</tr>
<tr>
<td>9 New York</td>
<td>Bronx</td>
<td>0.92</td>
<td>0.76</td>
</tr>
<tr>
<td>10 Florida</td>
<td>Miami-Dade</td>
<td>1.03</td>
<td>0.84</td>
</tr>
<tr>
<td>11 Tennessee</td>
<td>Shelby</td>
<td>0.91</td>
<td>0.77</td>
</tr>
<tr>
<td>12 Florida</td>
<td>Broward</td>
<td>0.97</td>
<td>0.80</td>
</tr>
<tr>
<td>13 New York</td>
<td>Queens</td>
<td>0.93</td>
<td>0.76</td>
</tr>
<tr>
<td>14 Georgia</td>
<td>Fulton</td>
<td>0.99</td>
<td>0.79</td>
</tr>
<tr>
<td>15 Maryland</td>
<td>Baltimore City</td>
<td>0.94</td>
<td>0.76</td>
</tr>
<tr>
<td>16 Ohio</td>
<td>Cuyahoga</td>
<td>0.91</td>
<td>0.76</td>
</tr>
<tr>
<td>17 Georgia</td>
<td>DeKalb</td>
<td>0.92</td>
<td>0.77</td>
</tr>
<tr>
<td>18 District of Columbia</td>
<td>District of Columbia</td>
<td>0.97</td>
<td>0.77</td>
</tr>
<tr>
<td>19 New Jersey</td>
<td>Essex</td>
<td>0.92</td>
<td>0.76</td>
</tr>
<tr>
<td>20 North Carolina</td>
<td>Mecklenburg</td>
<td>0.93</td>
<td>0.76</td>
</tr>
</tbody>
</table>

*Note. Gender ratios are male counts divided by female counts.*
County, the African American gender ratio there would equal the White gender ratio. Based on this logic, there are 87,283.5 missing African American men in Cook County.

This calculation assumes that no African American females are missing (which is mistaken: African American women die prematurely compared with White women), that all nonmissing African American men are enfranchised (also mistaken: nonmissing African Americans can be disenfranchised by ex-felon laws), and that there is no undercount in census values (mistaken as well). With these limitations as background, we now explain how we calculate the total number of missing African Americans in the United States without imposing these assumptions. As will be clear shortly, our method relies on 2010 Census data and life tables published by the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC). Life tables provide mortality rates, broken down by age, gender, and race, and we use life tables from 1970 through 2010 to estimate the number of African Americans who would have been alive in 2010 had they been exposed to White mortality rates.

Intuitively, we calculate the number of missing African Americans by considering what the African American population in the United States in 2010 would look like if, since 1970, African American and White mortality
rates were the same. African Americans who would have been alive in 2010 if African American and White mortality rates were identical are missing due to premature mortality. The same logic applies to incarceration: Disproportionately incarcerated African Americans are those who are incarcerated beyond the level of Whites, holding fixed gender and age. We apportion missing African Americans to legislative districts based on gender ratios where, as we noted already, we assume gender-imbalanced districts (too many African American women compared with African American men given the ratio of White women to White men) are those with the most missing African Americans.

**Counting Missing African Americans**

Consider a counterfactual United States wherein African American living conditions are equivalent to White living conditions, implying that African Americans and Whites share the same economic and political statuses, life expectancies, exposures to the criminal justice system, access to health care, and so forth. In such a counterfactual, no African Americans are missing in excess from their communities, and African American incarceration and mortality occur at rates on par with Whites.

Let \( M_{a,g} \) and \( W_{a,g} \) denote the counterfactual number of nonincarcerated African American men and women, respectively, for 5-year age group, \( a \in A \), and in geography, \( g \in G \). For most of what follows, \( A \) denotes Census-defined age groups, that is, \( A = \{ 0 - 4, 5 - 9, 10 - 14, \ldots \} \). The elements of \( G \) must partition the United States; the states plus Washington, D.C., partition the country as do congressional districts. For example, \( M_{a,g} \) could denote the number of nonincarcerated African American men aged 50 to 54 years ( \( a = "50 - 54" \) ), who in our counterfactual United States live in Florida ( \( g = "Florida" \)).

Let the true number of nonincarcerated African American men and women of age group \( a \) in geography \( g \) be denoted \( m_{a,g} \) and \( w_{a,g} \), respectively. These two quantities likely differ from the counterfactual number of nonincarcerated African American men, \( M_{a,g} \), and women, \( W_{a,g} \), respectively. If, for example, African American living conditions cause men of age group \( a \) in geography \( g \) to die before corresponding Whites, then \( m_{a,g} < M_{a,g} \). Gaps between \( m_{a,g} \) and \( M_{a,g} \) and between \( w_{a,g} \) and \( W_{a,g} \) are a function of the extent to which actual and counterfactual numbers of African American men and women, respectively, are missing from the United States as a result of living conditions. For a given age group \( a \) and geography \( g \), let \( \Delta_{a,g}^M = M_{a,g} - m_{a,g} \) and \( \Delta_{a,g}^W = W_{a,g} - w_{a,g} \) be the number of missing African American men and women, respectively.
Characterizing missingness parameters, $\Delta_{a,g}^M$ and $\Delta_{a,g}^W$, requires a set of assumptions. First, we assume that, for each age group $a$, the ratio of African American men to African American women is defined as a counterfactual value $R_a$, a ratio that would characterize the African American male–female gender ratio in geography $g$ were African American and White living conditions equivalent:

$$R_a = \frac{M_{a,g}}{W_{a,g}}.$$  \tag{1}

Equation 1 allows the African American gender ratio of adolescents to differ, say, from the African American gender ratio of young adults; as men of all races tend to suffer greater mortality in young adulthood, allowing $R_a$ to vary in this way is appropriate. $R_a$ does not vary by geography. Second, we assume that the number of missing women in every geography $g$ is proportional to the number of missing men:

$$\Delta_{a,g}^W = C_a \Delta_{a,g}^M,$$  \tag{2}

where $C_a$ is a factor of proportionality for age group $a$. Equations 1 and 2 imply that the total number $\Delta_{a,g}^M + \Delta_{a,g}^W$ of missing African Americans of age group $a$ in geography $g$ can be expressed as follows:

$$\Delta_{a,g}^M + \Delta_{a,g}^W = \frac{\left( R_a \frac{M_{a,g}}{W_{a,g}} - m_{a,g} \right) (1 + C_a)}{1 - R_a C_a}.$$  \tag{3}

Based on Equation 3, we can compute for every age group $a$ and geography $g$, the total number of missing African American men and women due to excess death and incarceration if we know the following:

1. the number of nonincarcerated African American men $m_{a,g}$ and women $w_{a,g}$ of age group $a$ living in $g$,
2. the counterfactual ratio $R_a$ of nonincarcerated African American men and women who would live in $g$ if African American and White living conditions were equal, and
3. the rate $C_a$ of missing men to missing women caused by African American living conditions.

The sum $\sum_{g \in G} (\Delta_{a,g}^M + \Delta_{a,g}^W)$ is the total number of missing African Americans of age group $a$ in the United States, and $\sum_{a \in A} \sum_{g \in G} (\Delta_{a,g}^M + \Delta_{a,g}^W)$ is the total number of missing African Americans in the United States.
Determining $m_{a,g}$ and $w_{a,g}$ while Correcting for Undercounting

To determine the number of nonincarcerated African American men $m_{a,g}$ and women $w_{a,g}$, we use the 2010 Decennial Census. The 2010 Census tabulates the population of African American men and women and the population of incarcerated African American men and women by age groups $a$ and geographies of interest $g$. We generate values of $m_{a,g}$ and $w_{a,g}$ by subtracting incarcerated populations from total populations. However, raw census counts are confounded by undercounting—in particular, the undercounting of young African American men—resulting in underestimates of $m_{a,g}$ and $w_{a,g}$. To correct for this, we use estimates of the undercount. In the absence of published undercount estimates for the 2010 Census, Robinson, Adlakha, and West (2002) provide estimates of undercount rates by age and race for the 2000 Census. For example, they argue that 8.8% of African American men aged 25 to 29 were not counted in the 2000 Census; relatedly, they show that the rate of undercounting African American women aged 25 to 29 is effectively zero (see Robinson et al., 2002, Appendix Table 2, p. 26). Robinson, Adlakha, and West provide undercount estimates for two race groups, African American and non–African American, and henceforth, we treat their non–African American undercount rate as a White rate.

The implication of the census undercount is that we observe neither $m_{a,g}$, the true number of nonincarcerated African Americans of age $a$ in geography $g$, nor $w_{a,g}$. Instead, we observe a Census-counted, nonincarcerated population that is absent individuals due to undercounting. We, thus, decompose the actual population of nonincarcerated African American men and women into the Census-counted population ($\hat{m}_{a,g}$ and $\hat{w}_{a,g}$, respectively) and the undercounted population ($u^M_{a,g}$ and $u^W_{a,g}$, respectively):

$$m_{a,g} = \hat{m}_{a,g} + u^M_{a,g},$$

$$w_{a,g} = \hat{w}_{a,g} + u^W_{a,g}.$$

For each gender, we express the undercount in a geography $g$ as a product of the number individuals counted by the Census in $g$ and a rate ($\gamma^M_a$ and $\gamma^W_a$ for men and women, respectively) of undercounting. Assuming that undercounting rates are constant across geographies, we have the following:

$$u^M_{a,g} = \hat{m}_{a,g} \frac{\gamma^M_a}{1 - \gamma^M_a},$$
Incorporating these calculations into Equation 3 yields our main result:

$$\Delta a_g^M + \Delta a_g^W = \frac{R a \hat{w}_{a,g} \left( \frac{1}{1-\gamma a^W} \right) (1+C a) - \hat{m}_{a,g} \left( \frac{1}{1-\gamma a^M} \right) (1+C a)}{1 - R a C a}.$$  

(4)

The effects of our undercount adjustment can be seen in Figure 2, which plots nonincarcerated African American gender ratios by age group for the entire United States. The black curve is based on raw census counts, and the gray curve shows undercount-adjusted counts. Gender ratios are closer to one when undercounts are incorporated, and this is because African American men are systematically undercounted in the census.

**Solving for $R_a$ and $C_a$**

Standing in our way of using Equation 4 to calculate the number of missing African Americans $\Delta a_g^M + \Delta a_g^W$ for a given census geography $g$ are, for
each age group $a$, the counterfactual gender ratio $R_a$ and the rate $C_a$ of missing African American women as a function of missing African American men. Because we assume that both $R_a$ and $C_a$ are constant across geography, we solve for these parameters using the national-level sum of the nonincarcerated African Americans plus the national-level sum of the missing population:

$$R_a = \left( \frac{1}{1 - \gamma_a^M} \right) \sum_{g \in G} \hat{m}_{a,g} + \sum_{g \in G} \Delta_{a,g}^M,$$

and

$$C_a = \frac{\sum_{g \in G} \Delta_{a,g}^W}{\sum_{g \in G} \Delta_{a,g}^W}.$$

Figure 2. Ratio of voting-age, nonincarcerated African American men to voting-age African American women by age group.
With Equations 5 and 6, we can solve for $R_a$ and $C_a$, respectively, as long as we have three quantities for every age group $a$ at the national level: the total number of nonincarcerated African American men and women in the United States ($\sum_{g\in G} \hat{m}_{a.g}$ and $\sum_{g\in G} \hat{w}_{a.g}$), the rate at which African American men and women are undercounted by the census ($\gamma_a^W$ and $\gamma_a^M$), and the total number of African American men and women who are missing due to disproportionate death and incarceration ($\sum_{g\in G} \Delta_{a,g}^M$ and $\sum_{g\in G} \Delta_{a,g}^W$). The first two quantities have already been determined, and what remains is the third.

We henceforth drop the geography index $g$ as it is no longer needed when estimating national-level figures. Therefore, $\sum_{g\in G} \Delta_{a,g}^M$ is now denoted $\Delta_a^M$, $\sum_{g\in G} \hat{m}_{a.g}$ is now $\hat{m}_a$, and so on. We express the total number of missing African Americans as the sum of the number of men and women missing due to disproportionate mortality ($D_a$) and the number of men and women missing due to disproportionate incarceration ($I_a$):

$$\Delta_a^M = D_a^M + I_a^M,$$

$$\Delta_a^W = D_a^W + I_a^W.$$

### Counting Disproportionately Deceased African Americans ($D_a$)

The CDC provides estimates of mortality rates by gender, age (up to 85), and race for every year going back to 1970. Although our CDC life tables distinguish between White and African American racial groups going back to 1980, years prior to that, the life tables only distinguish between between White and non-White racial groups. Therefore, before 1980, we use the non-White mortality rates to represent African American mortality rates. These mortality rates tell us the percent of each population that is estimated to die within a year. If for a given year, we multiply the estimated African American population in each age–gender group by the associated African American mortality rate for the said group, we will have an estimate of the number of African Americans who died in that group and in that year. Similarly, if we multiply that same African American population by the associated White mortality rate, then we will have an estimate of the number of African Americans who would have died in that group and in that year had the members of this group been exposed to White mortality rates. The difference in these two death counts is, for a given age–gender group
in a given year, the number of excess African American deaths that occurred on account of the gap in mortality rates between African Americans and Whites. We expose hypothetical survivors in a given year to the same group-specific mortality risks of subsequent years, allowing those who died in excess hypothetically to survive at annual White survival rates until 2010. Those hypothetical survivors are those who are missing because of disproportionate mortality rates \( D_a \).

Formally, we estimate these missing men and women in two steps. First, in every year \( y \in Y \), where \( Y = \{1970, 1971, \ldots, 2009, 2010\} \), we determine the total number of African American men and women who died in excess—meaning those individuals who died in year \( y \) but would have lived to year \( y+1 \) had they been exposed to White mortality rates. To compute excessive deaths, we multiply the total African American population \( \tilde{M}_{a,y,p} \) by the difference in mortality rates between African Americans \( Q_{B,a,y,p} \) and Whites \( Q_{W,a,y,p} \) for each year, age, and gender. In year \( y \) for age group \( a \) and gender \( p \), we estimate the number of African Americans who died in excess \( E_{a,y,p} \) as

\[
qqE_{a,y,p} = \tilde{M}_{a,y,p} \left( Q_{B,a,y,p} - Q_{W,a,y,p} \right).
\]

Second, we determine how many African American men and women who died in excess in each year would have survived until 2010 had they lived with White risks of mortality. This number of hypothetical survivors \( S_{a,y,p} \) is calculated by multiplying the excess deaths for a given year, age, and gender by the repeated product of White survival rates \( \left( 1 - Q_{W,a,y,p} \right) \) for each year and age after that, until 2010:

\[
S_{a,y,p} = E_{a,y,p} \prod_{i=1}^{2010-y} \left( 1 - Q_{W,a+i,y+i,p} \right).
\]

We sum over surviving populations by gender and by 2010 age, \( a' = a + (2010 - y) \), to determine the total number \( D_{a}^{W} \) of missing men and the total number \( D_{a}^{W} \) of missing women who would have survived in 2010 but instead died in excess:

\[
D_{a}^{W} = \sum_{y \in Y} S_{a',y,p=\text{male}},
\]

\[
D_{a}^{W} = \sum_{y \in Y} S_{a',y,p=\text{female}}.
\]
Counting Disproportionately Incarcerated African Americans ($I_a$)

The 2010 Census breaks down the incarcerated population in the United States by race, gender, and 5-year age groups. Figure 3 shows this breakdown, plotting the incarcerated population as a percentage of the total population by age, race, and gender. We can easily see that African American men and women are disproportionately incarcerated at far greater rates than White men and women. We determine the total number of African Americans who have been disproportionately incarcerated for each age group $a$ and gender $p$ by multiplying the White incarceration rate $\Phi_{a,p}$—the fraction of the total White population that is incarcerated—by the total African American population ($M_{a,p}$). This provides the expected number of African Americans of said age and gender who would be incarcerated if they experienced White rates of incarceration. Subtracting this expected number from the actual number of African Americans who are incarcerated ($J_{a,p}$) yields the count of the missing African Americans disproportionately incarcerated, by age and gender. This is expressed formally as,

$$I_{p,a} = \hat{J}_{a,p} - \Phi_{a,p}M_{a,p}.$$

For example, 1.62% of White men between the ages of 20 and 24 were incarcerated in 2010, a much smaller rate than the nearly 9% of African American men. If the country’s 1,540,168 African American men between 20 and 24 were incarcerated at this rate, there would be approximately 25,030 African American men of this age group in jail. However, in reality, there are 132,132 African American men in jail between the ages of 20 and 24. Thus, 107,102 African American men between 20 and 24 are disproportionately incarcerated ($1.62\% \times 1,540,168 - 25,030$).

Combining Deceased and Incarcerated African Americans

Across all age groups, an estimated 33,956 African American women and 684,424 African American men were disproportionately incarcerated as of 2010. Moreover, an estimated 1,194,927 African American men and 822,416 African American women would have survived to 2010 had they not died as a result of disproportionate mortality. We, thus, identify 2,735,724 African Americans who are missing from their communities due to excess death and incarceration.
Continuing at the national level, for each age–gender group, we take undercount-adjusted population counts for African American men and women and add them to our missing counts. This generates counterfactual African American population counts for the entire country that would exist in the absence of a White–Black living condition gap. Then, for each age group $a$, we use Equation 1 to calculate the ratio $R_a$.

For $C_a$, the situation is similar. For every adult age group, we divide the missing African American female population by the missing African American male population, and the result is the rate at which African American women are missing relative to men. For example, our estimate of the missing African American female population across the United States for ages 30 to 34 is approximately 26,201, and our estimate of the corresponding missing African American male population is approximately 153,964. Therefore, women between the ages of 30 and 34 are missing at a rate 17% that of men.

Table 2 lists values of $R_a$ and $C_a$ by age group. From the former, we see that, if African Americans had shared the same rates of mortality and incarceration as Whites, there would be much more parity between African American men and African American women than there is in reality. That is to say, the $R_a$
values in Table 2 show that the African American gender ratio has been dramatically reduced by high rates of African American mortality and incarceration. For example, the counterfactual gender ratio $R_a$ for African Americans between the ages 25 and 29 is approximately one. This ratio drops by about four percentage points over the next 35 years as men leave their communities at higher rates than women. Importantly, Table 2’s $R_a$ values are between 10 and 6 percentage points greater than the actual (and undercount adjusted) gender ratios observed in 2010, which were plotted earlier in Figure 2.

Table 2’s values of $C_a$ show that, for most age groups, African American men are missing from their communities at much greater rates than African American women. As we might expect given literature reviewed in addition to the clear gender imbalance in both panels of Figure 6, African American missingness affects men more than women.

**Limitations in Our Model of Missingness**

We describe above how our model of African American missingness leverages gender ratios to estimate at various geographical levels the number of African American individuals missing from their communities due to disproportionate rates of incarceration and premature mortality. Like any model, however, ours has limitations, and we discuss some of these here.

We assume across geographies that the ratio ($m_{a.g}$ to $w_{a.g}$) of nonincarcerated African American men to African American women varies only as a result of missingness and not as a result of other factors that might influence the geographic distribution of men and women. There are instances where such an assumption is violated. For example, certain places in the United States attract a disproportionate number of men as a result of employment opportunities—such as Hawaii with military service and North Dakota with jobs in the oil and gas industry. In these locations, the ratio of men to women would be greater than the counterfactual estimates from our model, which uses national gender ratios unaffected by migration within country. Our model would, therefore, attribute such skewed gender ratios to missingness rather than employment. Because of this, our inferences about the number of missing men and women in destinations for male migration—such as Hawaii and North Dakota—may be biased downward. It should be pointed out, however, that these types of places tend to have very small African American populations, and the effects of them on our overall calculations are almost certainly negligible.

Just as disproportionate male migration can bias our estimates of missing individuals downward in destination places, it can bias our estimates upward in places where migrants originate. In these places of origin, some men might appear to be missing due to incarceration or premature mortality when they
are in fact absent as a result of seeking work in other locations. If we compute the number of missing African Americans in a particular geography, this number will also include those African Americans who have migrated out of that geography—if such migration altered the gender ratio of the residents within the geography. If, however, the gender ratio of migrants was the same as the gender ratio of the missing, then our estimates would remain unaffected by migration. Moreover, migration will only bias our estimates if net migration occurs across geographies. The dramatic migration of African Americans from the South to the Midwest had concluded by the start of our study.

It is important to note that, in some cases, the bias discussed above can produce negative missing values, as we see in Figure 9. Such negative estimates are usually small because they occur in locations with relatively small African American populations.

Nonmissing Yet Disenfranchised African Americans

To analyze the African American population that is nonmissing yet disproportionately disenfranchised due to ex-felon voting laws, we consult Uggen, Shannon, and Manza’s (2012) state-level estimates of felon disenfranchisement. We use these estimates to determine the number of ex-felon African Americans who would have voting rights if African Americans and non–African Americans were similarly affected by felon disenfranchisement laws. In other words, we estimate the difference between the number of African Americans who are actually disenfranchised by state laws and the number of African Americans who would be disenfranchised by said laws if African Americans and non–African Americans had identical disenfranchisement rates.

Uggen, Shannon, and Manza provide estimates at the state level of African Americans disenfranchised by ex-felon voting laws, and we are interested in estimating disproportionate disenfranchisement at geographic levels below the 50 states. To allocate ex-felons within states, we assume that African Americans disproportionately disenfranchised by ex-felon laws are distributed across each state in the same way that missing African Americans are distributed. With this assumption, we apportion the disproportionately disenfranchised African American ex-felon population to substate geographies according to the percent of the missing population in the state. For example, if our missingness calculations show that approximately 30% of Maryland’s missing African American population belongs in Baltimore City, then we assume that 30% of Maryland’s disproportionately disenfranchised ex-felons live in Baltimore City.
Figure 4 displays by state the total number of disenfranchised African American ex-felons and the number disproportionately disenfranchised. As the black bars in the figure make clear, states with the greatest numbers of disenfranchised ex-felons can be found in the South, in states such as Florida and Virginia with large African American populations and strict ex-felon disenfranchisement laws. The shorter gray bars in Figure 4 show that, across every state pictured, the majority of African Americans disenfranchised by ex-felon voting laws are disproportionately disenfranchised. This is evidence that ex-felon voting laws have an excessive, detrimental effect on African Americans.

If ex-felon African Americans in Florida and Virginia were disenfranchised at the same rate as ex-felon non–African Americans, then there would be an increase in the voting-age African American population in these two states by 308,313 and 177,068, respectively. There are five other states—Tennessee, Georgia, Alabama, Texas, and Mississippi—where, in the absence of deleterious African American living conditions, the number of African Americans who would otherwise be able to vote is more than 50,000.15
Assessing Our Allocation Model

We have thus far described a model for allocating missing African Americans across the United States. Our model is grounded in varying gender ratios, and we have noted that other scholars have used these ratios to infer the absence of men in given locations. Assessing a model of missingness is challenging, particularly so because most of the missing African Americans whom we identify are missing on account of premature mortality (this point will be made explicit shortly). Prematurely deceased individuals are not readily distinguishable from normally deceased individuals, and we cannot validate our counts of premature deaths by comparing counties where we believe that there have been many such deaths with, say, observed counts of deaths.

With the goal of model validation as background, Figure 5 plots for 1,698 counties across 19 states the estimated number of individuals sent from these counties to state prisons in 2008 against our estimates of the number of African American men missing in 2010. Dots in the figure are sized based on observed county African American populations.

Before we discuss the value of Figure 5, we note its limitations. Our data on the county origins of prisoners cover only African Americans sent to state prisons; they exclude individuals incarcerated in federal institutions. Moreover, the prison admissions data we have are not delineated by race. In contrast, our estimates of missing African Americans aggregate disproportionately incarcerated African Americans and prematurely deceased African Americans, and they include African Americans sent to state and federal penal institutions.

For all these reasons, we might not expect a strong association between the counties of origin of (state) prisoners and our estimates of missing African Americans. Nonetheless, we observe in Figure 5 a positive correlation, and this is demonstrated by the figure’s weighted regression line. The more missing African American men in a county that our algorithm identifies, the greater the number of African Americans sent from said county to state prison. Although this result does not imply that our model is correct, the upward sloping regression line in the figure implies that our allocation model is roughly consistent with reality.

African American Disenfranchisement across the United States

We now turn to an assessment of the political consequences of African American missingness and disproportionate exposure to ex-felon voting laws. We first consider the United States as a whole, and our results are thereafter
ordered by jurisdiction, starting with states, moving to legislative districts, and finally to city council districts in several cities.

**The United States**

In the country overall, we identify 3,902,862 African Americans disenfranchised as of 2010 due to disproportionate mortality, incarceration, and prior-felony conviction. This amounts to 13.24% of the African American population that would be enfranchised if African Americans and Whites had comparable living conditions and 1.684% of the total U.S. population who would be enfranchised. Of the approximately 3.9 million disenfranchised African Americans, 2,017,344 are missing due to excessive mortality and 718,380 due to excessive incarceration.

Figure 6 breaks down missing African Americans by age–gender and by disproportionate mortality (left panel) and incarceration (right panel). Both male and female mortality distributions are skewed to the left, connoting higher excessive mortality among older adults; for example, as of 2010, there were about 340,000 excess African American deaths (250,000 men and 90,000 women) for individuals aged 60 to 64 years. The right panel of
Figure 6 describes by age and gender the excess number of incarcerated African Americans. As of 2010, African American missingness due to incarceration is a smaller problem than missingness due to mortality, and this is evident in a comparison of bar heights across the left and right panels of the figure. Figure 6 shows as well that disproportionate African American incarceration is almost entirely a male phenomenon.

These national totals are striking, but they understate the degree to which African American living conditions have altered African American enfranchisement at subnational levels. Due to the concentrated nature of the African American population in the United States, the rate of African American disenfranchisement in some areas dwarfs the national rate of approximately 13%. As is well known, African Americans are not uniformly distributed across the United States but rather are highly concentrated in what is historically called the “Black Belt” (Key, 1949, pp. 5-7) as well as in major metropolitan areas, for example, Baltimore, Chicago, Cleveland, and Detroit. And, within many American cities, there are areas of high African American concentration and areas that have almost no African Americans (e.g., Boustan, 2011). The effects of African American disenfranchisement, thus, vary
tremendously across the United States, and this is readily apparent in the results below.

**States**

We identify 28 states with positive African American disenfranchisement rates. These states are listed in Figure 7, and the bar lengths in the figure describe the fraction of a state’s African American population that would have had been enfranchised had African Americans and Whites shared comparable living conditions.

Consistent with the concentration of African Americans in the United States, the southeast is heavily represented in Figure 7. Moreover, disproportionate disenfranchisement rates in five states—Tennessee, Virginia, Florida, Alabama, and Kentucky—are at least one and a half times that of the United States. Tennessee has the highest African American disenfranchisement rate, and we find that 193,401 African Americans—about a quarter of the African American population who would have otherwise been able to vote in this state—are disenfranchised. Although this is not apparent in the figure, nearly half (93,868) of those disenfranchised in Tennessee are no longer in their communities because they are missing; the other half consists of individuals disproportionately disenfranchised by Tennessee’s felony laws.

Figure 7’s disenfranchisement rates imply that structural disenfranchisement of African Americans has a far greater effect on voting rights than many other features of African American political life that are considered to have significant effects. For example, Barreto et al. (2009) find, in Indiana, an 11.5 percentage point gap between African Americans and Whites in the percent of the voting-age population that has valid voter identification. This is a sizable difference, but it is around half of what we estimate to be the African American disenfranchisement rate in Tennessee due to African American living conditions. In fact, we identify 19 states (Pennsylvania and up) whose African American disenfranchisement rates exceed 11.5 percentage points.

A more nuanced view of African American disenfranchisement can be seen in Figure 8, which describes county-level disenfranchisement rates. The importance of county government varies across the United States, but many counties possess law enforcement, election administration, and financial powers. The Southeast and former Confederacy are prominent in Figure 8 as are some urban areas with many African Americans, for example, Chicago and Detroit. Moreover, Figure 8 illustrates how much variation there is across the United States in African American disenfranchisement rates. It is fair to say that most counties in the country have African American disenfranchisement rates that are effectively zero. In others, we observe disenfranchisement
Figure 7. African American disenfranchisement rates, by state, as of 2010.

Figure 8. African American disenfranchisement across counties as of 2010.
rates of more than 30%. The extent to which political institutions are attempting to ameliorate the systemic problems exposed in Figure 8 is beyond the scope of our analysis, but the figure makes it clear that the political salience of African American disenfranchisement is more of a local matter than one national.

How can we interpret our result that, in Tennessee and Virginia, more than one fifth of eligible African Americans are not able to vote? In our judgment, the sheer magnitudes of the African American disenfranchisement rates in some states and counties make it very difficult to speculate on potential consequences for turnout among nonmissing African Americans, for example. We return to this issue in the “Conclusion” section, where we seek to put our results in perspective.

Congressional Districts

The most important lawmaking institution in the United States is Congress, and we, thus, turn to estimates of African American disenfranchisement rates across congressional districts. Figure 9’s histogram of African American disenfranchisement rates across congressional districts in the 112th Congress shows that, although most districts are estimated to have a tiny (near zero) number of disenfranchised African Americans, there are a number of Districts estimated to have tens of thousands of disenfranchised African American men and women. The average congressional district in 2010 had just above 500,000 voting-age residents, and there are 73 districts where at least 20,000 African American men and women have been disproportionately disenfranchised due to premature mortality, incarceration, or prior-felony convictions. There are also 29 districts with more than 40,000 such individuals and three with more than 80,000. The most dramatic example of African American disenfranchisement at the congressional district level is Virginia’s third district, where the number of disenfranchised African Americans reaches more than 112,000.

As shown in Figure 9, our estimates of the African American disenfranchised population are not always positive (see Note 19). In fact, there are 179 districts where our estimates of the disenfranchised population are less than zero. This occurs because gender ratios tend to vary across geographies in ways that are not always a result of incarceration or premature mortality. For example, the at-large congressional district in Montana has twice as many African American men as African American women. This is not only because the African American population in Montana is very small (totaling 2,641 individuals) but also because African Americans who have migrated to Montana are mostly men seeking employment in extractive industries. In
general, districts with the greatest ratios of African American men to African American women are in West and Midwest states, places with small African American populations mostly composed of a disproportionate number of men who have moved there for labor opportunities.

The negative missing values in Figure 9 are mostly very small. Among congressional districts with negative numbers of missing African Americans, as many as 90% have fewer than 4,445 such individuals. In contrast, among districts with a positive number of missing African Americans, only 30% are below that magnitude. This suggests that, although our estimates of African American missingness can be slightly biased by the geography of labor markets, this bias translates into a very small absolute numbers of individuals.

Figure 10 is a map in which congressional districts are shaded according to the size of their disenfranchised populations. The average congressional district has nearly 9,000 disenfranchised African Americans, but this number is somewhat misleading on account of the concentration of African Americans in certain areas in the United States. In Southern and urban congressional districts, African American disenfranchisement can be excessive. As Table 3
shows, there are five congressional districts—all in Virginia and Florida, where many ex-felons are disproportionately disenfranchised—where the African American disenfranchisement rate is above 30%.

To assess the degree to which African American disenfranchisement has changed the majority–minority status of existing congressional districts, see Figure 11. Each panel in this figure describes African American disenfranchisement rates across congressional districts in one of four states, and districts within a panel are ordered by the African American fraction of the voting-age population that would be enfranchised had African Americans and Whites shared similar living conditions. Each solid black bar represents the actual number of enfranchised African Americans in a district, and the empty (i.e., not shaded) extension of each bar reflects the size of the disenfranchised population.

The dots in Figure 11’s four panels reflect the number of enfranchised African Americans required for a given district to be majority African American. Empty dots reflect counterfactual calculations—that is, the number of African Americans who would live in a district were White and African American living conditions are equivalent—and solid dots reflect actual numbers of African Americans. When a solid dot is above a district’s solid bar, African Americans did not have an enfranchised majority in the district in 2010; for example, the seventh congressional district in Alabama was

Figure 10. African American disenfranchisement across congressional districts as of 2010.
majority African American in 2010 (the solid dot below the height of the seventh district’s solid bar), but the sixth was not (the sixth’s solid dot lies above the district’s solid bar). If an empty dot lies below the top of a district’s empty extension, then the disenfranchised population is large enough to give African Americans the majority in the district.

Key in Figure 11 are congressional districts with solid dots that lie above solid bars (these districts are not majority African American based on actual conditions), yet have empty dots below corresponding empty bar extensions (the districts are majority African American when disenfranchised African Americans are counted). In Florida, for example, District 3 becomes majority African American when the disenfranchised population is counted, and in Georgia, Districts 2 and 5 become majority African American when disenfranchised African Americans are reinserted in these jurisdictions.

Table 3. Congressional Districts with the Greatest African American Disenfranchisement Rates.

<table>
<thead>
<tr>
<th>District</th>
<th>Percent disenfranchised Among African Americans</th>
<th>District overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia 3</td>
<td>38.6</td>
<td>21.5</td>
</tr>
<tr>
<td>Florida 2</td>
<td>32.6</td>
<td>7.0</td>
</tr>
<tr>
<td>Florida 3</td>
<td>32.1</td>
<td>16.6</td>
</tr>
<tr>
<td>Virginia 4</td>
<td>31.4</td>
<td>10.8</td>
</tr>
<tr>
<td>Florida 11</td>
<td>30.1</td>
<td>8.4</td>
</tr>
<tr>
<td>Tennessee 8</td>
<td>29.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Tennessee 9</td>
<td>27.8</td>
<td>17.8</td>
</tr>
<tr>
<td>Tennessee 5</td>
<td>26.6</td>
<td>6.8</td>
</tr>
<tr>
<td>Florida 17</td>
<td>25.4</td>
<td>14.9</td>
</tr>
<tr>
<td>Alabama 7</td>
<td>25.0</td>
<td>15.9</td>
</tr>
<tr>
<td>Alabama 2</td>
<td>22.6</td>
<td>7.2</td>
</tr>
<tr>
<td>New York 11</td>
<td>22.4</td>
<td>13.8</td>
</tr>
<tr>
<td>Mississippi 2</td>
<td>21.6</td>
<td>14.4</td>
</tr>
<tr>
<td>Virginia 5</td>
<td>21.5</td>
<td>4.7</td>
</tr>
<tr>
<td>New York 10</td>
<td>21.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Missouri 1</td>
<td>21.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Alabama 1</td>
<td>20.5</td>
<td>5.8</td>
</tr>
<tr>
<td>Alabama 3</td>
<td>20.4</td>
<td>6.8</td>
</tr>
<tr>
<td>Georgia 13</td>
<td>20.0</td>
<td>11.7</td>
</tr>
<tr>
<td>New Jersey 10</td>
<td>20.0</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Note. Considers only congressional districts that are at least 20% African American.
Figure 11 shows that African American disenfranchisement has changed the majority–minority status of existing congressional districts. As majority–minority districts are disproportionately likely to yield African American members of Congress (Lublin, 1997; Valelly, 2004), it follows that the racial makeup of the U.S. House as of 2010 reflects the extent of African American disenfranchisement documented here. One might posit that this point is somewhat superfluous insofar as abrogations of a group's voting rights are not generally judged based on the possibility that they have affected election results. Nonetheless, if one were to argue that African
American disenfranchisement matters only if it has the potential to change election outcomes, then Figure 11 is highly germane.

**State Legislative Districts**

We now turn to state legislative districts, which are akin to federal congressional districts, in that they are used to staff state legislatures. The nature of federalism in the United States is such that many laws affecting African American welfare are heavily influenced by state laws, that is, laws regulating tax policy, education, health care, election administration, and so forth. State legislative districts contain smaller and, hence, more concentrated populations than congressional districts, and, as a result, they are more vulnerable to dramatic rates of African American disenfranchisement.

Tables 4 (upper chamber) and 5 (lower chamber) display the 20 state legislative districts with the highest rates of African American disenfranchisement.

### Table 4. African American Disenfranchisement in Upper Chamber State Legislative Districts.

<table>
<thead>
<tr>
<th>State</th>
<th>District</th>
<th>Percent disenfranchised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>African American</td>
</tr>
<tr>
<td>Virginia</td>
<td>9</td>
<td>44.3</td>
</tr>
<tr>
<td>Florida</td>
<td>32</td>
<td>42.3</td>
</tr>
<tr>
<td>Virginia</td>
<td>11</td>
<td>36.9</td>
</tr>
<tr>
<td>Florida</td>
<td>1</td>
<td>35.9</td>
</tr>
<tr>
<td>Tennessee</td>
<td>28</td>
<td>35.2</td>
</tr>
<tr>
<td>Florida</td>
<td>6</td>
<td>34.0</td>
</tr>
<tr>
<td>Tennessee</td>
<td>10</td>
<td>33.9</td>
</tr>
<tr>
<td>Tennessee</td>
<td>31</td>
<td>31.8</td>
</tr>
<tr>
<td>Virginia</td>
<td>18</td>
<td>30.9</td>
</tr>
<tr>
<td>Florida</td>
<td>18</td>
<td>30.7</td>
</tr>
<tr>
<td>Tennessee</td>
<td>30</td>
<td>30.1</td>
</tr>
<tr>
<td>Tennessee</td>
<td>33</td>
<td>29.8</td>
</tr>
<tr>
<td>Mississippi</td>
<td>25</td>
<td>29.7</td>
</tr>
<tr>
<td>Virginia</td>
<td>2</td>
<td>29.5</td>
</tr>
<tr>
<td>Virginia</td>
<td>16</td>
<td>29.4</td>
</tr>
<tr>
<td>Alabama</td>
<td>19</td>
<td>29.2</td>
</tr>
<tr>
<td>Mississippi</td>
<td>12</td>
<td>28.2</td>
</tr>
<tr>
<td>Virginia</td>
<td>19</td>
<td>27.9</td>
</tr>
<tr>
<td>Alabama</td>
<td>35</td>
<td>27.6</td>
</tr>
<tr>
<td>Tennessee</td>
<td>19</td>
<td>27.4</td>
</tr>
</tbody>
</table>
(excluding districts less than 20% African American). For both chamber types, there are districts where the disenfranchised African American population exceeds 40% of the district’s total African American population. Moreover, in every district in Tables 4 and 5, more than a quarter of potential African American voters have been disenfranchised. Finally, among the lower chamber districts in Table 5, where constituencies are relatively small, almost a third of the African American population is disenfranchised.

The legislative districts in Tables 4 and 5 are in Southern states with large African American populations, large incarcerated populations, and strict laws that disenfranchise ex-felons; this explains the recurrence of Alabama, Florida, Mississippi, Tennessee, and Virginia. Overall, our state legislative disenfranchisement rates illustrate that inequalities in health and incarceration have major representational consequences for African American voting blocs in many Southern state legislative districts. This would be missed were
we to consider only national- or state-level estimates of African American disenfranchisement.

As a final point about legislative districts in the United States, Table 6 describes changes to African American majority status induced by enfranchising African Americans in the three legislative district types we have considered. There are 22 congressional districts where African Americans make up the majority of the enfranchised population. However, if the disenfranchised population were to be considered, there would be 28 districts where African Americans held the majority of the disenfranchised population. This represents a 27% increase in majority African American districts. Percentage changes for state upper and state lower house districts are 17% and 20%, respectively.

With these percentages in mind, the number of federal and state legislative districts across the United States that become majority–minority when disenfranchised African Americans are considered is dramatic. Approximately 14% of the population of the United States identified as African American, either in part or exclusively, and around 5% of congressional districts are majority African American. Without African American disenfranchisement, this percentage would rise to 6%. Both these numbers are small, and this explains why the change of 5% to 6% represents a 27% increase in the raw number of majority African American congressional districts. Overall, Table 6 shows that, were disenfranchised African Americans part of the American electorate, there would be a significant increase in the number of legislative districts expected to elect African American representatives.

**Conclusion**

Disenfranchisement has traditionally been understood as the revocation of political rights, either the right to vote or the right to equal representation.
Formally, large-scale disenfranchisement in the United States is an artifact of the past: With the exception in some jurisdictions of felons, ex-felons, and those judged to be mentally incompetent, all adult citizens in the United States have the right to vote. We, nonetheless, argue that disenfranchisement can transcend formal legal institutions, and to this end, we have calculated the number—approximately 3.9 million—of African Americans who, as of 2010, cannot vote due to premature mortality, incarceration, or ex-felon status. This number is evidence of structural racism or what Ellis (2015) might call “Lockout.” Ellis’s characterization of lockout refers to disenfranchisement channeled through the legal system, and here we build on this notion by considering the disenfranchising effects of excess mortality as well.

Not only have we calculated the national African American disenfranchisement rate (it is 13.2%), but we have also shown how African American disenfranchisement is woven into the political fabric of the nation. States, congressional districts, and state legislative districts are confounded by the several million African American men and women who cannot vote on account of their living conditions. These findings reveal a troubling aspect of American democracy.

We motivated this article, in part, by noting that contemporary literature on American elections tends to examine narrow barriers to voting such as voter identification laws. We do not disagree that these barriers are important and worthy of study. Nonetheless, our results imply that the most dramatic barriers to African American electoral participation in the United States are neither voter identification laws nor laws restricting early voting, for example. Rather, disenfranchisement via premature death and excessive incarceration is a feature of contemporary African American life in the United States that dominates all other barriers to political activity that we can think of.

Our twin objectives have been enumerating and apportioning disenfranchised African Americans across key political geographies such as states and various types of legislative districts. Thinking just about our enumeration exercise, our findings on African American disenfranchisement almost certainly understate the effects of African American living conditions on the U.S. franchise. We take as given where Whites and nonincarcerated African Americans live, and this incorporates in our analysis historical legacies of racial segregation, African American impoverishment, enduring patterns of violence, and White flight from urban centers. One would imagine that, in a world with equal living conditions, African Americans would not be as concentrated as they are in the contemporary United States, and this means that our estimates of the effects of African American disenfranchisement are likely too narrow.
We hope that our results on national- and district-level disenfranchisement rates spur research on the political consequences of the local disenfranchisement. How does extensive—yet legal—African American disenfranchisement affect turnout among enfranchised African Americans? Does the dramatic disenfranchisement we have documented lead enfranchised African Americans to vote at relatively high rates in attempts to change their living conditions, or, does disenfranchisement damage communities and lead to low levels of turnout? How different would legislative district lines be if missing African Americans were no longer missing? Missingness by construction diminishes the pool of available African American candidates for office; how many potentially valuable African American legislators are not in office because they died prematurely? Finally, on account of African American missingness, legislative district median voters are almost certainly too conservative; in future research, we intend to try to characterize the extent to which federal and state legislative medians would change were disenfranchised African Americans enfranchised.

We conclude by emphasizing that we have restricted our attention to the gap in living conditions between two racial groups, Whites and African Americans. Nonetheless, one perspective on our results is that we have estimated the consequences for the U.S. franchise of a particular form of socioeconomic inequality, namely, explicitly race-based poverty and marginalization. Inequality in the United States transcends racial lines, and in the future, we anticipate extending our analysis to characterizing the extent of missingness—and consequent disenfranchisement—based solely on poverty. A characterization of the relationship between poverty and disenfranchisement will help us understand the nature of democracy in the United States and the extent to which the right to vote is truly available to all citizens in the country.

**Data Sources**

The following list describes the data sources for the analyses in this article.

1. The 2010 Decennial Census: We extracted data tables for the census from Minnesota Population Center’s (2011) National Historical Geographic System between October 2, 2015, and December 18, 2015. For all geographies other than Census blocks, total population tabulated by race, age, and sex were obtained from Table PCT3 in Summary File 2a of the Census. Incarcerated populations tabulated by race, age, and sex were obtained from Table PCO3 in Summary File 2b. Nonincarcerated populations were calculated by subtracting incarcerated from total populations. For geographies at the block level, total populations tabulated by race, sex, and age were obtained from
Table P12 in Summary File 1a. The total incarcerated population at the block level is obtained from Table P43, factfinder.census.gov

2. Historical population estimates: Our population data come from three sources. From 1970 to 1979, we use annual Census population estimates by age, sex, and race (PE-11), extracted from https://www.census.gov/popest/data/historical/index.html. For years 1980 to 1989, we use quarterly Census population estimates by age, sex, and race (June quarter), extracted from https://www.census.gov/popest/data/national/asrh/1980s/80s_n_d.html; and, for years 1990 to 2010, we use the CDC’s bridged race population estimates extracted from http://wonder.cdc.gov/Bridged-Race-v2014.HTML. All extractions were made on January 22, 2016.

3. Life tables published by the CDC: Mortality rates for Whites and African Americans by age and sex are computed by the CDC and published in annual reports, publicly available on http://www.cdc.gov/nchs/products/life_tables.htm. We use life tables going back to 1970, and we downloaded these tables between January and March of 2016.

4. Locations for the validated prisoners: Our state prisoner location data come from the Justice Atlas of Sentencing and Corrections, which can be found at http://justiceatlas.org (last accessed October 28, 2017). The Atlas provides counts of the number of people who were admitted to state prison from various counties in the United States. The data were collected through contacts with various state agencies in each state. The definition of prison admission varies by state and can include individuals admitted to local jails.

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Notes

1. We believe that the first use of the term “missing” in the context of African Americans can be found in an article on African American men in Ferguson, Missouri, by Stephen Bronars; see Bronars (2015).

2. Although almost all incarcerated felons across the United States are not permitted to vote, there are some exceptions. In Maine and Vermont, convicted felons who are incarcerated are allowed to vote. However, there is a relatively small number of African American men and women who are incarcerated in these two states. As of the 2010 Census, there were in Maine 10 incarcerated African American women and 234 incarcerated African American men; in Vermont, there were 14 incarcerated African American women and 125 incarcerated African American men.

3. Our consideration of missing individuals is similar to that of Pettit (2012), who shows that evidence on the educational progress of African American men is confounded by the fact that incarcerated African American men, whose education levels tend to be relatively low, are often not sampled by researchers studying educational attainment. Pettit refers to nonsampled African American men as “invisible.”

4. As that African Americans are, on average, poorer than Whites, socioeconomic influences on turnout and voting have racial connotations. For example, Bartels (2008) finds that income-related voting disparities are consequential for political representation and policy outcomes.

5. In some states, the counties of incarcerated individuals are publicly available; this information is not particularly useful, though, given the sizes of many counties. Moreover, federal prisons do not necessarily house inmates in the states where they committed crimes and/or previously lived. We contacted the Federal Bureau of Prisons in an attempt to gather data on the distribution of federal prisoners’ original states or regions of sentencing, but the Bureau declined to provide us this information. Our Bureau of Prisons Freedom of Information Act request number was 2015-07778, denied on October 15, 2015.

6. The literature on gender differences in mortality and incarceration is extensive (e.g., Case & Paxson, 2005; Rogers et al., 2010), exploring biological factors and behavioral factors such as smoking.

7. The underlying idea behind the table can be found in Wolfers, Leonhardt, and Quealy (2015). The authors of this article, Justin Wolfers, David Leonhardt, and Kevin Quealy, estimate using gender ratios that there are 1.5 million missing African American men between the ages of 25 and 54 in the United States. On the origins of the term “missing,” see Note 1.

8. Nebraska has a unicameral state legislature, and we treat its single chamber as an upper legislative chamber.

9. We removed blocks where any incarcerated person resides. Remaining blocks, therefore, include only nonincarcerated individuals.

10. Assuming that undercount rates for the 2000 Census apply to the 2010 Census likely makes our results on African American missingness conservative. In addition to providing undercount rates for the 2010 Census, Robinson, Adlakha,
and West also describe undercount rates, by age group and by race (African American vs. non–African American) for the 1990 Census. The majority of the 1990 undercount rates are in magnitude greater than corresponding 2000 rates, and this is consistent with the idea that census counters are improving over time in their abilities to count the U.S. population. If Census undercount rates were lower in 2010 than in 2000, then some African Americans whom we treat as undercounted are actually missing. This will make our estimates of the number of missing African Americans too low.

11. Studies have shown that mortality rates tend to be increasingly misreported among individuals 85 and older (e.g., Tinetti et al., 2012), and, thus, we focus here on mortality rates for individuals below 85 years of age.

12. The majority of our analysis uses 5-year age groups because this is how the census tabulates incarcerated populations by sex and race. Moreover, because our key results use voting-age population, we disregard populations younger than 18 years old. To do this, we assume that the population of juveniles between 15 and 17 who reside in incarceration facilities for adults is negligible. In fact, the Census finds that individuals younger than 18 (10,445 men and 1,198 women) make up only 14% of the incarcerated population in adult facilities between the ages of 15 and 19. See Table P43 and PCO3 in Summary File 1 of the 2010 Census for figures about incarcerated populations.

13. Uggen, Shannon, and Manza’s enumeration of the consequences of felon disenfranchisement laws includes parolees, felon probationers, ex-felons, and individuals incarcerated. We exclude their estimates of the lattermost quantity when constructing our estimates of the number of African Americans who are disproportionately disenfranchised by ex-felon voting laws and treat the category of “non-African-American” in Uggen, Shannon, and Manza (2012) as equivalent to White. Therefore, because Hispanics make up a relatively large percent of the disenfranchised non–African American population, we overstate the true rate at which Whites have been disenfranchised by ex-felon laws. This makes our estimate of the number of African Americans who have been disproportionately disenfranchised conservative.

14. In states where subgeographies contain negative numbers of missing African Americans, we redistribute ex-felons by first adding the minimum negative value of all the subgeographies to each of the subgeographies. This adjusts the number of missing so that no value in any geography is negative. Then, we calculate the proportion of the total missing population in each subgeography using these adjusted figures and allocate the ex-felons according to these proportions.

15. In Spring, 2016 Virginia Governor Terry McAuliffe restored voting rights to ex-felons in his state. Because our results date to 2010, this executive decision is not part of our analysis. See Stolberg and Eckholm (2016).

16. To calculate the national rate of African American disenfranchisement, we divided the number of disenfranchised African Americans (missing plus non-missing) in the country by the number of enfranchised African Americans who would be present were African American and White living conditions identical. The enfranchised population is calculated by subtracting the number of
African Americans restricted from voting due to a felony conviction from the total number of nonincarcerated African Americans. Then, we add the excess disenfranchised African American population back—those disenfranchised due to excessive mortality rates, incarceration, and felon conviction—to the population to obtain the population that would be enfranchised if African Americans and Whites shared similar disenfranchisement rates.

17. What we characterize as an overall African American disenfranchisement rate is not necessarily the full rate of African American disenfranchisement in the United States as of 2010. For example, we ignore adult African Americans who cannot vote on account of not possessing required forms of voter identification.

18. There is a slight drop in Figure 6, left panel, around the 40 to 44 age group, and this drop reflects the fact that our data capture only disproportionate African American deaths that occurred after 1970. Individuals who were born in 1969 and died in excess that year, as well as those who died in excess in years previous to 1969, ideally would be captured in the surviving population depicted in Figure 6. Because they are not, our estimates of African American missingness as of 2010 are conservative.

19. Some states have a surfeit of African American men due to features of the national labor market. Because these states tend to have “too many” men compared with the number of women, we conclude that the number of missing individuals in such states is negative. However, the sum of the number of negative missing African Americans is very small compared with the sum of the positive number of missing African Americans.

References


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