Municipal Boundaries, the Changing Color Line, and Racial Segregation, 1990-2020

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Even as the country becomes more racially diverse as a whole, the pattern of racial diversification across places remains uneven (Hall and Lee 2010; Lichter, Parisi, and Taquino 2015). Lichter et al. (2015) call for more research on how "places—as political and economic actors—play a large and typically unappreciated role in excluding blacks and other minorities from the geographic mainstream" (2015:870). Indeed, across over 20,000 places in the United States, local governments use a wide range of policy levers to shape where people live. Practices like burdensome fines and fees and increased police surveillance in minority neighborhoods can have the effect of disproportionately deterring minority residents from living there, even if there is no expressed racist intent (Beck 2019, n.d.; Carmichael and Kent 2014; Collins, Stuart, and Janulis 2021; Harris 2016; Muhammad 2011; Pacewicz and Robinson 2021). Municipalities also determine geographic boundaries that deter Black and minority population growth. For example, the proliferation of zoning laws fosters growth of higher income White residents while suppressing the availability of housing for lower income minority residents (LaBriola 2022; Lens 2022; Rothwell and Massey 2009; Shlay and Rossi 1981; Trounstine 2018).

Research on administrative boundaries shows how boundaries for school districts, state and local legislative districts, and congressional voting districts can be manipulated in ways that facilitate racial inequality (Bischoff 2008; Cain and Zhang 2016; Cooperstock 2022; Palandrani and Watson 2020; Reardon, Yun, and Eitle 2000; Vargas et al. 2021; Yarbrough 2002). Similarly, place boundaries can be leveraged to achieve desired proportions of racial groups within the place and is an understudied practice that contributes to between-place segregation. For example, municipal annexations can be used to exclude Black and Hispanic residents at the municipal fringe by avoiding them, known as "municipal underbounding" (Aiken 1987; Anderson 2008; Durst 2014, 2019; Johnson et al. 2004; Lichter et al. 2007; Moeser and Dennis 2020; Mukhija and Mason 2013; Murphy 1978).

Municipal underbounding is often detrimental to the quality of life for Black and Hispanic residents relegated to municipal fringes with worse services and no voting rights on municipal affairs affecting them (Anderson 2010). However, an unexamined extension of these previous findings is that annexations can be detrimental to racial minority residents already living within the place if the addition of White residents dilutes minority political power in elections (*Gomillion v. Lightfoot* 1960; Moeser and Dennis 2020; Murphy 1978; *Richmond v. Virginia* 1970). While these types of minority-diluting annexations were previously subject to federal oversight for many places through Sections 4 and 5 of the Voting Rights Act (VRA), Section 4 (and by extension, Section 5) was ruled unconstitutional and barred from further enforcement on June 25th, 2013, by the US Supreme Court in *Shelby v. Holder*. The purported effectiveness of the law prior to invalidation is one explanation offered for the counterintuitive finding that there was no widespread municipal underbounding against Black communities in studies analyzing data from 1990-2010 (Durst 2018), but less is known about the patterns of municipal boundary changes in this most recent decade, post-*Shelby*.

Municipal annexations constitute the majority of observed municipal boundary changes in recent decades, but other forms such as incorporation, consolidation, dis-incorporation, and secession also merit attention.[1] Moreover, previous research on municipal annexations has primarily investigated the avoidance of Black and Hispanic communities (Aiken 1987; Durst 2014, 2018, 2019; Johnson et al. 2004; Lichter et al. 2007; Wilson and Edwards 2014). But, as

the U.S. continues to experience growth in racial minority populations through immigration, places are becoming even more diverse beyond Black, White, and Hispanic, with the predominant racial minority group(s) additionally varying across metropolitan areas (Jensen et al. 2021). Evidence from residential segregation patterns, individual preferences for neighborhoods by neighborhood racial composition, and other indicators of closeness like interracial relationships across a variety of contexts (see Hwang and McDaniel [2022] for a review) highlight the endurance of Black exceptionalism, which refers to the distinctly large social distance between Black versus non-Black residents compared to any other pairwise comparisons between racial groups (Parisi, Lichter, and Taquino 2011). The extent to which municipal boundary patterns also reflect this bright Black/non-Black boundary (Fox and Guglielmo 2012; Lee and Bean 2004) in the most recent decade is also understudied.

In this paper, I use block- and place-level demographic data from the U.S. Census, ACS, and LODES (block-level only) for all available years between 1990-2020, and place- and block-level shapefiles for 1990, 2000, 2007, 2013, 2014, and 2020 to investigate whether and how municipal annexations differ in the post-*Shelby* era (2014-2020) compared to findings from earlier periods (1990-2013), and whether these patterns affect minority racial composition in over 15,000 places in continued existence since 1990, covering all 41 states that have annexable land.[2] Using difference-in-differences regression models, I first compare the probability for municipalities to conduct annexations before and after *Shelby*. Next, I examine whether annexations result in greater racial minority population share decreases after *Shelby* and whether these decreases are greater for Black populations compared to other racial minority groups. Finally, I assess whether metropolitan areas with higher rates of minority-diluting municipal annexations have higher levels of between-place segregation with linear regression models. Figures 1 to 3 show examples of municipal annexations between 2000-2020 for Atlanta, GA, Jacksonville, AL, and no changes for Waleska, GA. Blocks are shaded with a gradient of Black composition of the fringe territory. Blocks highlighted in bold outlines are those that I identify as having been annexed. Place boundaries for 2020 are shown for comparison.[3]

To understand other forms of municipal boundary changes, I plan to collect and analyze data for all 50 states. Following Bischoff's measure of school district fragmentation (2008), I will track metropolitan fragmentation over time and how they are associated with trends in between-place racial segregation in metropolitan areas from 1990-2020 using linear regression models. This analysis primarily captures trends in new municipal incorporations, which tend to increase metropolitan fragmentation and between-place segregation, especially with the recent growth in the number of newly formed, majority-minority municipalities (Marsh, Parnell, and Joyner 2010; Smith and Waldner 2018). Next, I will track the probability of de-annexations (or secessions), which is experiencing a recent surge (Charles 2018; Owens and Gillespie 2018), consolidations, and dis-incorporations over time to understand underlying demographic trends associated with these more dramatic disruptions to municipal boundaries with hazard models.

In conclusion, this study combines multiple forms of Census data to make a novel contribution to research on municipal boundaries as a source of racial inequality, the limitations of federal regulations in preventing racial exclusion, and the enduring bright Black/non-Black racial boundary. First, I highlight the importance of an understudied method through which municipalities can shape their racial composition, which has implications for macro-segregation (Lichter et al. 2015). I also echo other research showing the importance of centering municipal practices for places of all sizes in understanding persistent racial inequality in the 21st century (Judd 2005; Lichter et al. 2015; Trounstine 2009).

Figure 1. Annexations in the City of Atlanta, GA, between 2000-2020

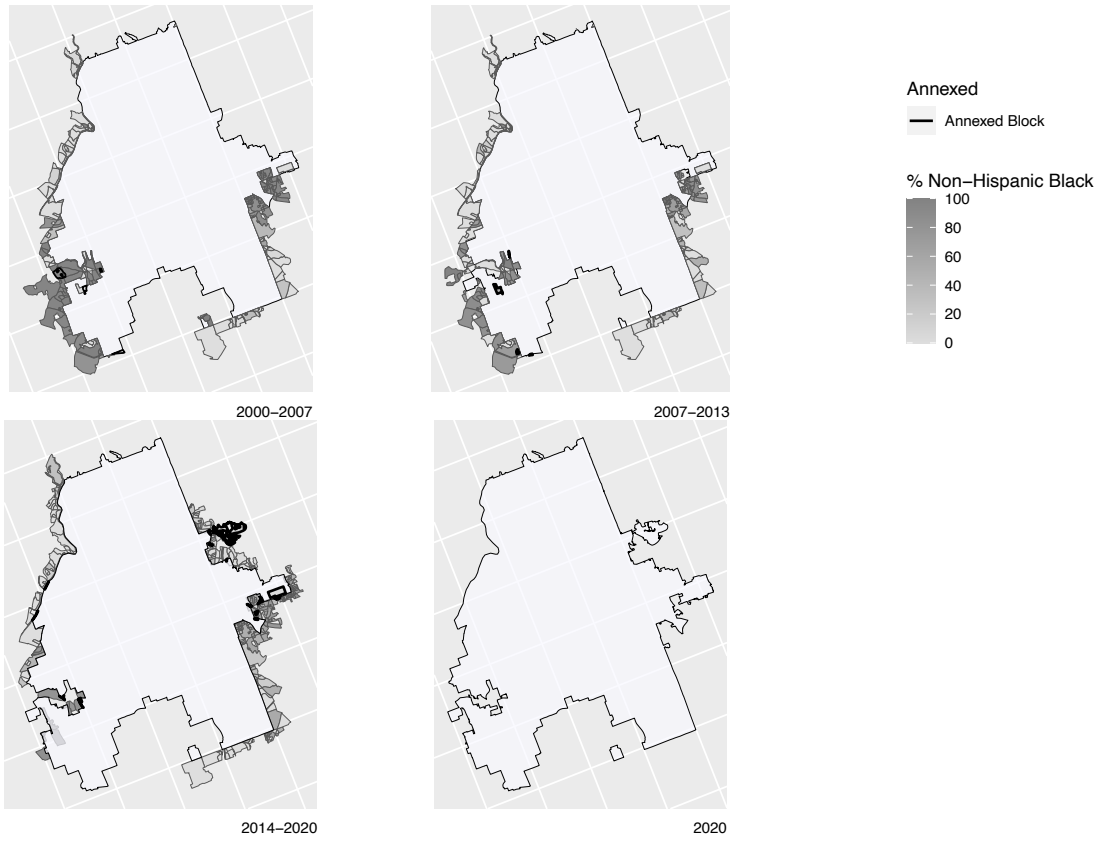
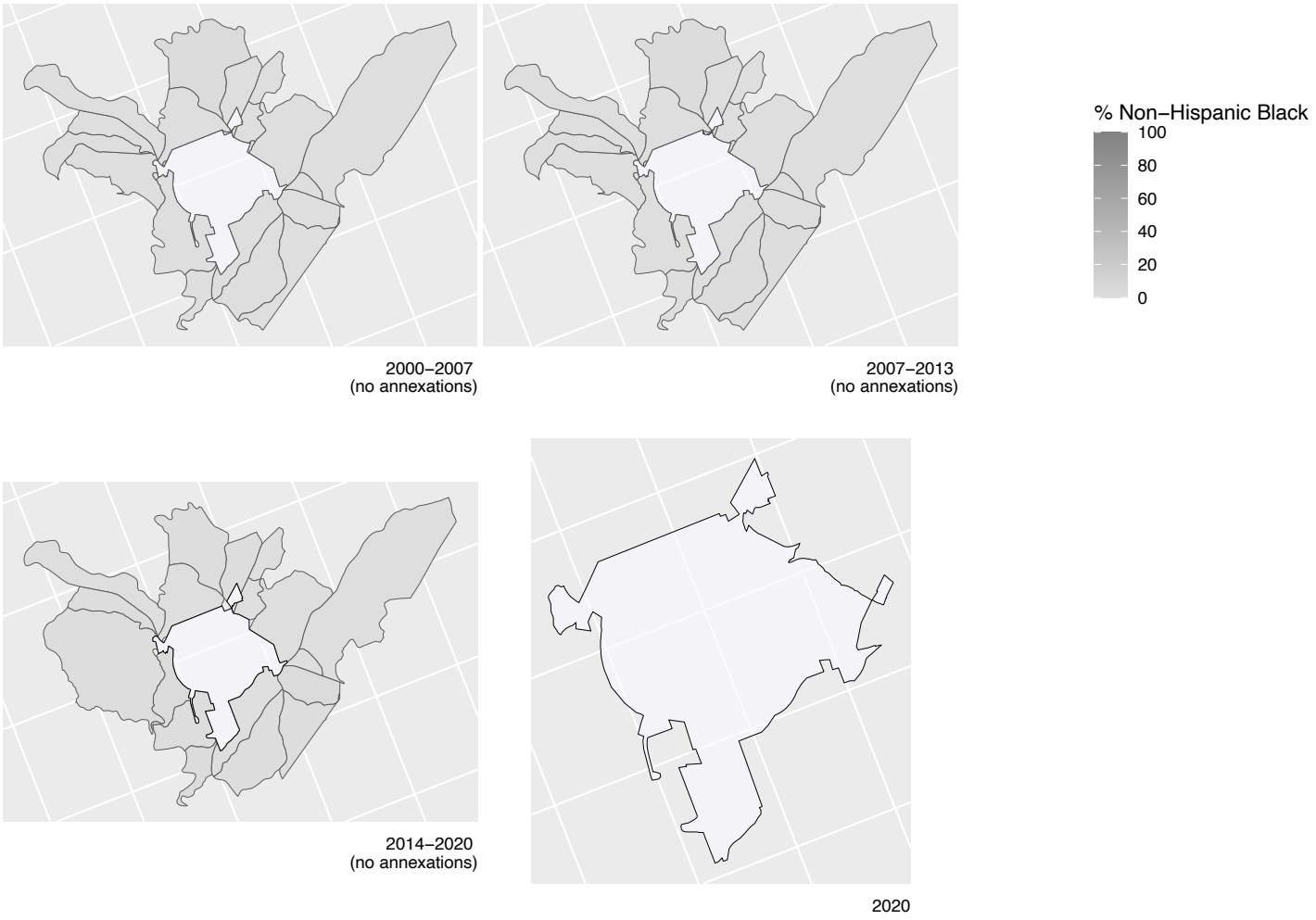


Figure 2. Annexations in the City of Jacksonville, Alabama, between 2000-2020

Figure 3. (No) Annexations in the City of Waleska, Georgia, between 2000-2020



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[1] Annexations are the dominant form compared to incorporation, consolidation, dis-incorporation, or secession. In official records of municipal boundary changes, at least 97% of all recorded boundary changes between 2000 to 2021 were for annexations. (Derived from author's own calculations from the Boundary and Annexation Survey: https://www.census.gov/geographies/reference-files/time-series/geo/bas/annex.html.)

[2] I rely on linear interpolation for inter-Censal years for block-level data, harmonized to 2010 boundaries.

[3] One significant challenge of identifying boundary changes through analysis of shapefiles is that boundaries change between years for reasons unrelated to administrative boundary changes. Moreover, refinements in how Census place boundaries are drawn over time, even when based on the same Census boundary-year, can result in boundary changes that are artificially recorded as annexations, for example. I reduce the possibility of misclassification in two main ways: First, I only classify Census blocks as being within a place if they have at least 90% areal overlap with the place boundaries, both at the beginning and at the end of the period. Thus, annexed blocks must have at least 90% areal overlap with place boundaries at the end of the period. These plots show that my identification strategy is conservative and only picks up some but not all blocks that are annexed when annexations occur, especially when blocks are only partially annexed, but I am nevertheless able to differentiate between places that did and did not annex, even across changes in boundary-years. Second, I validate my identified annexations with annexations

recorded in the Census Bureau's Boundary and Annexation Survey (BAS), the only official source of boundary changes for all states, even though it is incomplete in coverage. Moreover, the BAS does not contain block-level data on the annexed territory. Previous research on municipal annexations do not rely on the BAS for identification for these reasons. Nevertheless, using the BAS, I check whether a place I identified as having conducted an annexation during a given period is also officially recorded as having conducted an annexation in the BAS. These comparisons are available upon request, but importantly, I do not miss any annexations: there are no municipalities recorded officially in the BAS as having annexed that period that I do not pick up. Other forms of boundary changes are simpler to validate using Census place-level data over time.