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Contextual Selection and Intergenerational Reproduction

Abstract

Neighborhood and school contexts shape a wide range of children's life outcomes and reproduce race- and class-based inequalities. However, neighborhoods and schools are, of course, not randomly assigned. Which families gain access to environmental contexts most conducive to their children's development? This dissertation revisits this line of inquiry with a fresh lens. Sociological theories of contextual sorting have remained largely stagnant since the late 1990s, with the vast majority of relevant studies implicating structural factors – specifically, resources, racial preferences, and discrimination – as key drivers of residential mobility. Yet contemporary residential and educational opportunity structures have endured choice-oriented, market-based reforms (e.g., housing/school vouchers, charter school expansion, the large-scale destruction of public housing) and a simultaneous information explosion – factors that may amplify new drivers of contextual selection. In light of these shifts, I argue that accounts of contextual sorting should broaden from a primarily *structural* portrayal highlighting race, class, and residential mobility to also encompass factors central to the burgeoning *intergenerational reproduction* literature, including parental education, culture, and skills. Neighborhood, school, and childcare sorting should be conceived as related yet distinct social stratification processes.

Through four empirical chapters, I hone in on the independent and interactive roles of parents' race, resources, cognitive skills, and socioemotional health in shaping children's

neighborhood and school conditions within a theoretically strategic ecology: twenty-first century Los Angeles County. I employ panel data on children and parents from the Los Angeles Family and Neighborhood Survey and the Mixed Income Project from 2000 – 2012, linked to educational administrative data and geospatial measures from ArcGIS.

The first chapter, coauthored with Robert J. Sampson, leverages discrete choice models to predict neighborhood selection and reveals that parental cognitive skills (acquired knowledge, not IQ) predict neighborhood socioeconomic status, even after confirming the expected influences of race, income, spatial proximity, and housing markets. Moreover, highly-skilled upper/upper-middle class parents appear to sort specifically on the basis of average public school test scores rather than socioeconomic status, broadly. The second chapter proposes contextual sorting in general – and school sorting in particular – as an unexamined pathway linking parents' socioemotional health to their children's cognitive and socioemotional development. Congruent with this argument, logistic regression models show that parents who are more likely to be depressed are less likely to enroll their children in a school of choice (i.e., private, charter, magnet). These depression-based disparities appear starkest among disadvantaged minority – and particularly black – families.

The third chapter examines whether whites' and Asians' well-documented racial preferences to avoid Latinos and blacks are manifested through school sorting patterns not only in the core-city but also in the suburbs. Logistic regression models reveal that suburban white and Asian children living proximate to public schools with high concentrations of blacks and Latinos are more likely to attend non-assigned schools, often far from home. The fourth and final chapter proposes two theoretical accounts of contemporary school sorting: one centering on structural sorting and the other on intergenerational reproduction. Logistic regression models generate modest support for the former but strong support for the latter: parents' cognitive skills and socioemotional health are the most consistently predictive factors of child enrollment in a magnet, charter, or private school.

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Introduction

A central contention of sociology – that environmental contexts exert causal effects on individual outcomes and exacerbate inequality – is now broadly accepted, even in what were once the most skeptical corners of the social sciences. Experimental and quasi-experimental research designs – exemplified by the Moving to Opportunity housing voucher experiment (Chetty and Hendren 2018), marginal structural models (Sampson, Sharkey, and Raudenbush 2008), and exogenous shocks (Sharkey 2010) – have transformed the contextual effects literature from an urban sociology "cottage industry" (Sampson, Morenoff, and Gannon-Rowley 2002) into a cross-disciplinary behemoth.

However, as Sampson (2012) argued, the dominant experimental paradigm brackets some of the most intriguing sociological questions raised by the existence of contextual effects, including: *which families gain access to the most skill-promoting neighborhoods, schools, and childcare settings available*? Since (Jencks and Mayer 1990) raised concerns about the spuriousness of contextual effects, stratification scholars have expended tremendous analytic effort to break the link between (un)observable family characteristics and environmental contexts in order to purge bias. Yet *randomistas* would be wise not to forget that this link is itself central to understanding contemporary stratification processes. Sociologists should perceive contextual selection not as a "statistical nuisance" but itself as an object of social analysis (Sampson and Sharkey 2008) – one that improves empirical estimates of contextual effects (van Ham, Boschman, and Vogel 2018) and enriches our theoretical understanding of how neighborhoods, schools, and families independently and interactively reproduce inequality.

This dissertation revisits this line of inquiry with a fresh lens. While theories of *why* and *for whom* contextual effects matter (Sharkey and Faber 2014) have rapidly evolved, sociological theories of who gains access to which neighborhood, school, and childcare settings have remained largely stagnant since the late 1990s despite the emergence of increasingly sophisticated methodological tools to test them (Bruch and Mare 2012; Quillian 2015) and a rapidly evolving context of urban inequality. Contextual sorting research almost invariably employs a structural orientation, examines residential rather than educational selection, and turns on some combination of what Crowder and Krysan (2016) call "the big three": resources, racial preferences, and discrimination.

This perspective, widely known as the neighborhood attainment paradigm, draws heavily on the classic status attainment model, which predicts the payoffs and penalties of individuals' race, social origins, and lifecycle stage to their income or occupational prestige. Neighborhood attainment models estimate similar individual- and household-level factors' effects on neighborhood status, proxied by race and/or class composition (e.g., Alba and Logan 1993; Logan and Alba 1993; Pais 2017; Sampson 2012; Sampson and Sharkey 2008; South et al. 2016; South, Crowder, and Pais 2011). The model assumes all households aim to sort into the highest-status neighborhoods, typically perceived as the richest (e.g., Sampson and Sharkey 2008) and often whitest (e.g., South et al. 2011), that they can. Realizing this preference, however, is contingent on the constraints imposed by individual- and household-level characteristics and by the degree of race and class discrimination within the housing market (see Bruch and Mare 2012; Krysan and Crowder 2017; Quillian 2015).

Krsyan and Crowder argue that the contextual sorting literature should shift toward the fine-grained mechanisms underlying resources, preference, and discrimination effects, such as the role played by social networks in stratifying plausible neighborhood choice sets by race and class. This is certainly true. However, in this dissertation, I argue that a larger pivot is in order: accounts of contemporary contextual sorting should broaden from a *structural process* highlighting race, class, and

residential mobility to a case of *intergenerational reproduction* that implicates not only well-established structural factors but also parental education, culture, and skills and considers neighborhood, school, and childcare sorting as related yet distinct processes. The proposed shift implies these crucial environmental contexts are not merely *moderators* but also *mediators* of the intergenerational transmission of skills and status.

CONTEXTUAL SELECTION & INTERGENERATIONAL REPRODUCTION

The burgeoning intergenerational reproduction literature examines how class, culture, and skills interact to shape day-to-day parenting tactics, and in turn, children's life chances. Annette Lareau (2011)'s seminal work on "concerted cultivation" highlights how upper/upper-middle class families espouse a distinct cultural orientation toward parenting whereby children's development is central and intensive investment in children's academic and extracurricular activities is pursued to support it. Their institutional savvy also facilitates these ends; if their children's success is in any way thwarted within the school context, they rapidly and effectively intervene. Lower/working class families, on the other hand, typically pursue the "accomplishment of natural growth." This parenting model entails a more hands-off approach marked by confidence that their children will thrive with minimal intervention and trust in, and deference to, key institutional figures like teachers and administrators.

This argument provides considerable traction in explaining why socioeconomic status and skills are transmitted across generations: highly-educated and upper-class parents invest large and increasing amounts of financial resources in their children's development (Kornrich and Furstenberg 2013) and disproportionately facilitate their children's involvement in extracurricular activities (Chin and Phillips 2004; Weininger, Lareau, and Conley 2015). A related but distinct strand of literature documents how parents with high levels of education and cognitive/socioemotional skills devote

more time to, and engage more effectively in, skill-building activities like reading and high-quality conversations (Anger and Heineck 2010; Sastry and Pebley 2010).

Yet what both of these strands largely miss is that parents' education and skills may shape children's trajectories not only via day-to-day parenting practices (e.g., reading, play time, and discipline) and academic and extracurricular investments but also by facilitating their access to skills-promoting neighborhood, school, and childcare settings. This is the dissertation's core proposition, and it is motivated by underexamined transformations in the context of urban inequality.

Although persistently high levels of residential segregation underscore the enduring racial and class stratification of residential and educational markets, recent shifts may amplify the roles of education and skills. For example, an information explosion has indisputably saturated urban housing markets and transformed how Americans navigate them (Zumpano, Johnson, and Anderson 2003). Given the advent of real-time, publicly available data on neighborhood quality and school quality, the proliferation of digital tools facilitating connections with real estate brokers, financial institutions, and local authorities, and the link between cognitive skills and digital engagement (Tun and Lachman 2010), educational background and cognitive skills conceivably shape both the intensity of individuals' preferences for neighborhoods with "ideal" conditions and their ability to overcome constraints to realize these preferences.

Choice-based policies further fuel these dynamics: Section 8 housing vouchers and school assignment rules' liberalization theoretically reduce resource constraints and empower families to access the schools and neighborhoods most aligned with their preferences. Parents with higher levels of education and cognitive and socioemotional skills may more deftly navigate complex and emotionally fraught bureaucratic processes related to school enrollment, for example (Brown 2020). They may also more effectively access and process vast amounts of publicly-available information

on neighborhood and school quality, providing them with a leg up in accessing contexts most conducive to children's skill development.

This core argument, developed in more detail throughout the dissertation, is translated in each of the four chapters, into the following concrete hypotheses:

(1) Parental cognitive skills and social class independently and interactively predict which families gain access to the most advantaged neighborhoods with the highest-scoring public schools, even after accounting for the expected roles of race, housing markets, and spatial proximity.

(2) Parental socioemotional health shapes child development not only through day-to-day parenting tactics (e.g., playtime and discipline) but also through an unexamined pathway: contextual selection. Contemporary school choice systems place depressed, minority parents at a disadvantage in accessing high-status school alternatives due, perhaps, to the importance of information, networks, and interpersonal interactions.

(3) Minority avoidance preferences still matter, even in places and contextual domains where stratification scholars have rarely looked: suburban schools. In the absence of traditional school alternatives (e.g., charters, magnets, privates), highly-motivated parents enact their racial preferences by sending their children far from home – to private, magnet, charter, and non-assigned traditional public school.

(4) With the proliferation of non-neighborhood school options, contemporary school sorting resembles a traditional status attainment process whereby parents seek to place their children in the highest-status school alternatives (e.g., private, magnet, charter schools) they can access, contingent on their financial resources and institutional gatekeepers' race and class biases. However, parents' cognitive and socioemotional skills also matter, by stratifying the

intensity of preferences for school quality and facilitating parents' success in overcoming institutional hurdles to realize them.

By examining these hypotheses, I not only expand our understanding of which household-, parent-, and child- factors independently and interactively stratify children's environments – beyond the traditional structural repertoire. I also blaze a new trail for the intergenerational reproduction literature that places contextual decision-making front and center.

EXAMINING CONTEXTUAL SORTING IN A COMPLEX URBAN ECOLOGY

In the four dissertation chapters that follow, I integrate multiple literatures to construct arguments underlying each of the hypotheses above and leverage a theoretically strategic case – Los Angeles County during the 2000s and 2010s – to test them. Los Angeles is the nation's most populous and arguably most diverse county; its population of over 10 million residents exceeds the population of 40 of the 50 U.S. states, including Michigan. Beyond its sheer size, the county is perhaps the paradigmatic twenty-first century American metropolis in terms of its multiracial composition (whites, Latinos, Asians, and blacks all constitute nearly 10% or more of the population), immigrant density (a third of the population is foreign-born), and sprawling and fragmented spatial structure (the county contains nearly 90 municipalities). What Chicago was to 20th century urban sociology, Los Angeles may be to 21st century urban research (Dear 2002).

Extant research has leveraged these attributes – especially its diversity – to refine and test "big three" theories of residential sorting, specifically how racial residential preferences operate within a multiracial setting (Charles 2000, 2003; Zubrinsky 2006) that transcends the "black-white binary" (Katz 2012). But surprisingly little sociological research has leveraged Los Angeles' diversity, spatial structure, and fragmented governance to illuminate how parents of various race-ethnic,

nativity, and class backgrounds navigate a remarkably complex urban ecology to position their children for long-term success.

This is a missed opportunity. If parental education and skills were likely to shape children's environmental conditions, net of structural constraints, it would likely be Los Angeles during the 2000s and 2010s. Here, the neighborhood and school choice sets are vast and varied, suggesting access to information may meaningfully stratify residential and educational outcomes. Governmental agency maps and the *Los Angeles Times*' Mapping L.A. project suggest the vast county contains 87 distinct county neighborhoods spread across eight county sub-regions, the latter of which appear to operate largely as their own self-contained ecologies that retain very high proportions of residents over time (Sampson, Schachner, and Mare 2017). In terms of schools, the California Department of Education school directories identify approximately 2,000 public and 1,300 private K-12 schools, located across nearly 70 school districts, as being operational in Los Angeles County during the dissertation's analytic timeframe in question.

Navigating these geographically sprawling and institutionally fragmented choice sets is daunting, and perhaps increasingly so. School choice policies enacted in Los Angeles County since the late 1990s have fueled the proliferation of charter schools, the liberalization of school assignment rules, and the dissemination of a seemingly infinite array of school quality measures (featured in the *Los Angeles Times*, for example). In this context, the most highly-motivated parents with the requisite informational and institutional savvy may have a leg up. Indeed, human capital theory suggests highly-educated and highly-skilled people tend to conceive of their choice sets in broader terms (Heckman and Mosso 2014) and perhaps have more accurate information on choice set options, especially in fluid and dynamic markets.

Data Sources

The Los Angeles Family and Neighborhood Survey (L.A.FANS), which constitutes the empirical backbone of my dissertation, provides a unique glimpse of how a racially and socioeconomically diverse panel of approximately 3,000 households from a wide swath of neighborhoods, fared in the county during the 2000s. Data collection efforts occurred at two points in time: in 2000-02 (wave 1) and 2006-08 (wave 2). Similar to other panel surveys frequently used by sociologists, like the Panel Study of Income Dynamics (PSID) and the Project on Human Development and Chicago Neighborhood (PHDCN), L.A.FANS captures rich longitudinal data on financial, educational, health, and behavioral outcomes for adults, and their co-resident children, if applicable.

However, several distinctive features render it particularly useful for my purposes. For example, the study provides well-validated, repeated measures of not only children's cognitive and socioemotional skills but also the cognitive skills (drawn from the Woodcock-Johnson assessment) and socioemotional skills (based on the Pearlin Self-Efficacy Index) of their parents. The study also gauges parents' reasons for moving, as well as their expectations of, and investment in, their children's education. Crucially, L.A. FANS tracks a *continuous* log of both the census tracts where each panel household lived from 2000 – 2008 and the schools (public or private) attended by household children during the same time period. The continuously geocoded residential histories were extended to 2013 for about 1,000 respondents of the original L.A.FANS panel as part of the Mixed Income Project (MIP) led by Robert J. Sampson and Robert D. Mare.

Methodological Innovations

L.A.FANS/MIP's inclusion of census tract and school codes enables me to merge in rarely-deployed administrative and ArcGIS datasets that provide information on theoretically important features of the L.A. FANS sample's neighborhoods and schools. For example, beyond the traditional race and

class composition variables at each of these levels, I leverage administrative data from the California Department of Education to construct school- and neighborhood-level estimates of average test scores. I also use Los Angeles County-provided data on school catchment boundaries with ArcGIS to predict which public schools each of the L.A.FANS child respondents were assigned to and whether or not she attended her residentially-assigned school. ArcGIS enables me to calculate the network distance (in road miles) between household respondents' census tracts of residence, schools of enrollment (in the case of children), and potential neighborhood destinations. Sociologists are increasingly aware that residential mobility tends to be highly geographically circumscribed (Krysan and Crowder 2017); spatial and network proximity are likely crucial in shaping households' plausible residential and educational choice sets, especially in sprawling metros (Bruch and Swait 2019).

Refining how social scientists conceive and operationalize neighborhood and school choice sets is one of the key methodological innovations of this dissertation. Historically, residential mobility scholars have either entirely ignored modeling the choice set of neighborhoods available to potential movers or included a coarse control of the choice set, such as metropolitan area-averages of housing stock characteristics (e.g., price, age, vacancy) and sociodemographics into a linear model predicting the destination census tract's race and/or class composition. For an extended critique int his vein, see Bruch and Mare (2012).

The vast majority of this dissertation's models forsake the traditional linear models of neighborhood and school sorting because they typically assume homogenous preferences for neighborhood and school status operationalized in socio-demographic terms and because they inadequately account for a realistic set of possible choices from which families select. For these reasons, this dissertation primarily relies on multivariate models with binary outcomes indicating which neighborhood or type of school was selected after accounting for child, household, and

parent-level covariates and a theoretically and empirically informed set of plausible neighborhood and school choices.

When Bruch and Mare (2012) introduced the discrete choice framework to sociologists concerned with modeling residential outcomes, choice sets consisting of quantifiable neighborhood-level features were increasingly incorporated, but the choice set was typically constructed as a randomly-selected subset of the potential mover's metropolitan area as whole. Yet we know that most movers think locally about potential destinations, rather than conceiving of all metropolitan area neighborhoods as plausible choices – especially in a vast urban ecology like Los Angeles (Bruch and Swait 2019). As evidenced in my first dissertation chapter, coauthored with Robert J. Sampson, we explicitly account for these realities by constructing residential sorting models with choice sets that disproportionately sample potential neighborhood destinations within the potential mover's sub-county region of residence. As mentioned above, these eight county regions are constructed based on a review of schematic maps from various Los Angeles County government agencies and the crowd-sourced Mapping L.A. project overseen by the *Los Angeles Times*. These regions are widely recognized as distinct sectors among locals, and Angelenos are likely to have a greater degree of familiarity with other neighborhoods within their region of residence than in other regions of the county. Indeed, nearly 90% of L.A.FANS/MIP respondents who were tracked continuously from 2000-13 remained in the same county region over time. Few sociological studies, if any, take this kind of fine-grained approach to modeling the unique spatial structure of various urban ecologies.

My subsequent dissertation chapters go a step further by leveraging these eight county regions' boundaries to structure children's *school* choice set. I find that over 90% of K-12 students in the sample attend a school (whether public or private) located within their county region of residence. Therefore, applying county region fixed effects to the school sorting analyses helps account for the most plausible set of school options families face, without imposing the assumption

that children attend a school within their district (interdistrict transfer and private school programs lead ~15% to cross these boundaries) or the explicit assumption that local private, magnet, and charter density (e.g., within two mile radius) drives school decisions, when in fact, the salient radius may vary based on the degree of parental motivation and the urban/suburban context in which the household resides. The tract-based sampling strategy employed by L.A.FANS also enables me to include census tract fixed effects that valuably control for differences in families' plausible school choice sets as well as for difficult-to-observe factors that may lead certain types of families to reside within certain types of places.

CHAPTER OUTLINE

The dissertation proceeds as follows. The first empirical chapter, coauthored with Robert J. Sampson and published in *Demography*, develops a theoretical account of why parents' cognitive skills might interact with evolving metropolitan opportunity structures to predict the socioeconomic status of the neighborhoods in which they raise their children. We then go a step further by arguing that, congruent with the "concerted cultivation" literature, highly-skilled upper/upper-middle class parents with the economic means sort specifically on the basis of average public school test scores rather than socioeconomic status, broadly. We test these hypotheses using individual-, household- and neighborhood-level data on 237 parents tracked by L.A.FANS/MIP between 2001 and 2012. The measures include a well-validated proxy for parents' cognitive skills (acquired knowledge, not IQ) – the Woodcock-Johnson Assessment and continuous residential histories spanning 2001 to 2012. We link these households' L.A.FANS-provided geocoded census tracts to traditional race, class, and housing market indicators from the census, as well as ArcGIS data on the network distance (in road miles) between their census tract within a given year and potential neighborhood options and educational administrative on average test scores of local public schools proximate to

each neighborhood. We then construct discrete choice models of residential selection to examine the hypothesized parental skill-neighborhood sorting link.

The second, third, and fourth chapters pivot from neighborhood sorting to school selection processes, the latter of which has received far less attention in sociology's contextual sorting literature. However, American children are far less likely to attend their residentially-assigned public schools than they once were, especially in large metropolitan areas like Los Angeles, suggesting socially-stratified patterns of school sorting should receive more scrutiny. The second chapter examines school sorting through the prism of socioemotional health. I argue that parental depression may hamper children's cognitive and socioemotional development not only through increased physical discipline and reduced participation in traditional "concerted cultivation" activities but also diminished engagement in the school choice system. I use L.A.FANS data on parents' probability of depression using a well-validated survey instrument, as well as school enrollment data for over 2,000 child respondents spanning ages 5 to 17, linked to administrative catchment boundary data and ArcGIS spatial data. Logistic regression models predict whether parental depression independently predicts a reduced likelihood of enrollment in a school of choice (i.e., magnet, charter, or private school) and whether this depression disparity is amplified among disadvantaged minority parents who may lack the social and informational resources that could buffer the condition's negative effect on school sorting.

The third chapter shifts returns to a more traditional driver of contemporary school sorting: racial preferences. But whereas the bulk of extant literature on racial preferences and school sorting highlights the role alternative school options – i.e., privates, charters, and magnets – play in facilitating white families' exit from diverse core-city school districts, I argue that white and Asian parents' racial preferences may be so strong that these parents manage to enact them even in places where alternative school options are sparse: the suburbs. Specifically, I propose that when these

advantaged families live close to high concentrations of Latino and black children, they enact their racial preferences by sending their children far from home, to non-assigned schools. I test this possibility by using L.A.FANS-provided school enrollment data for over 2,000 child respondents spanning ages 5 to 17, linked to administrative catchment boundary data. Logistic regression models predict whether suburban white and Asian children are more likely to opt out of their locally-assigned public schools if they live proximate to public schools with more disadvantaged student bodies, even when controlling for the schools' socioeconomic composition, test score-based value-added measures, and local crime rates.

The fourth and final chapter attempts to articulate two accounts of contemporary school sorting that draw on the two theoretical traditions at the heart of this dissertation: structural sorting and intergenerational reproduction. I argue that the former tradition might posit that race and income play central roles in shaping who gains access to high-status school alternatives (e.g., private, magnet, and charter schools) due to spatial isolation from these school options, nontrivial resource constraints they impose, such as tuition and transportation costs, and institutional gatekeepers' biases for white and high-income students. I then articulate an alternative account, drawing on the intergenerational reproduction literature, that implicates parents' educational attainment and cognitive/socioemotional skills and health in shaping preferences for – and the ability to – send children far away to a highly-coveted school option and for conferring the institutional savvy and resilience to navigate a bureaucratically complex and often emotionally fraught selection process. I use logistic regression models to predict child enrollment in a school of choice (i.e., private, magnet, or charter) as a function of L.A.FANS-provided covariates capturing parents' socio-demographics and cognitive and socioemotional skills/health.

I conclude by summarizing the dissertation's key theoretical objectives and its core empirical findings. I then extract the implications of the research for the contextual sorting and

intergenerational reproduction traditions. I argue that the two streams of literature should be more tightly integrated through a unified theoretical framework that proposes neighborhood, school, and childcare sorting as key mediators of the intergenerational transmission of skills and status.

1

Skill-Based Contextual Sorting: How Parental Cognition & Residential Mobility Produce Unequal Environments for Children

with Robert J. Sampson

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Influential scholarship on socioeconomic stratification has increasingly examined how individual skills shape one's life chances. Cognitive skills, which are neither fixed nor genetically predetermined, have been linked to income levels, education, occupational attainment and criminal behavior, independent of race and class (Duncan and Magnuson 2011; Farkas 2003; Heckman and Mosso 2014; Heckman, Stixrud, and Urzua 2006; Jencks 1979). Combined with strong parent-child skill correlations (Anger and Heineck 2010; Sastry and Pebley 2010), this body of research has solidified cognitive skills as a key mechanism linking parents' and children's circumstances and fueled a burgeoning economic literature on the intergenerational process of skill development (Heckman 2006). Important sociological research has further shown how it is not genetics but the deployment of particular parenting tactics and investments by socioeconomically-advantaged and highly-skilled parents that enhance children's cognitive skill development, a process dubbed "concerted cultivation" (Bianchi, Robinson, and Milke 2006; Lareau 2011; McLanahan 2004; Schneider, Hastings, and LaBriola 2018).

Parenting tactics constitute only one part of the intergenerational transmission of skills, however. The quality of children's environmental conditions—childcare, schools, and neighborhoods—is arguably just as important. Yet in contrast to parenting tactics, the link between parental skills and environmental selection is often treated as a background factor to be controlled, rather than as a sorting process worthy of direct examination. Existing studies on neighborhood and

school sorting, for example, implicate parents' race and class characteristics and rarely disentangle the role of parents' cognitive skills from these correlates. But just as cognitively skilled parents of all race and class backgrounds more frequently engage their children in enrichment activities, we argue that cognitively skilled parents disproportionately sort their children into neighborhood, school, and childcare environments they perceive as offering skills-promoting features and higher status. Concretely, we propose that in an era of changing housing market and school enrollment dynamics, parents with higher cognitive skill levels, proxied by acquired knowledge, are more likely to sort into neighborhoods that are societally defined as high in status and desirability, even after accounting for the wide range of individual-level, household-level, and neighborhood-level characteristics emphasized in prior studies. We also propose that among socioeconomically advantaged parents, the highly skilled disproportionately sort not on neighborhood socioeconomic status specifically, but on a correlated neighborhood amenity they perceive – rightly or wrongly – to shape children's skill development: average K-12 school test scores.

We test these ideas by linking a dozen years of residential histories from an original third-wave follow-up of the Los Angeles Family and Neighborhood Survey (L.A.FANS). Combining census, geographic information system (GIS), and educational administrative data, we construct discrete choice models of neighborhood selection that account for heterogeneity among household types, incorporate Los Angeles County's unique spatial structure, and include a wide range of neighborhood factors beyond race and class composition, notably average public school test scores. Analogous to the way highly skilled parents propel children's skill development through parenting tactics and investments, we find that parental cognitive skills interact with opportunity structures to determine the quality of their children's residential environments. These micro-level processes plausibly ripple more broadly, constraining the set of residential and educational options

available to less advantaged and less skilled city residents. By linking research on demography, education, and neighborhood stratification processes, our study reveals *skill-based contextual sorting* as an overlooked driver of urban inequality, with direct implications for the intergenerational transmission of status.

PARENTS' COGNITIVE SKILLS AND CHILDREN'S ENVIRONMENTS

Recent scholarship on the mechanisms driving socioeconomic stratification has taken an analytic turn toward the intergenerational transmission of skill development. Skills encompass "capacities to act… [shaping] expectations, constraints, and information" (Heckman and Mosso 2014: 691). The conceptual model connecting skills to socioeconomic inequality suggests: cognitive, linguistic, social, and emotional skills shape individuals' socioeconomic outcomes; genetic endowments, parenting tactics, and environmental conditions interact to form children's skills; and skill acquisition occurs in a cumulative and complementary fashion, rendering early childhood experiences especially important (Cunha and Heckman 2007; Heckman 2006).

Cognitive skills can be conceived of as either "fluid intelligence" (i.e., individuals' rate of learning growth) or "crystallized knowledge" (i.e., individuals' amount of acquired knowledge). These skills have received disproportionate scholarly interest among stratification scholars given their prediction of income, educational attainment, teen pregnancy, smoking, and crime (Duncan and Magnuson 2011; Farkas 2003; Heckman et al. 2006; Kautz et al. 2014). Moreover, strong correlations between parent and child cognitive skills (Anger and Heineck 2010; Sastry and Pebley 2010) implicate a key mechanism linking parents' and children's circumstances. Recent analyses suggest two channels of influence are important: parents' (a) engagement in particular childrearing tactics and investments and (b) selection of environments (e.g., childcare, schools, neighborhoods)

conducive to cognitive skill development. Many studies have explored channel (a), documenting cognitively skilled parents' propensity to devote more time to child rearing and to particular child enrichment activities, such as reading and high-quality conversations. These practices support learning and exploration, bolstering children's skill development—part of the process sociologists call "concerted cultivation" (Bianchi et al. 2006; Lareau 2011; McLanahan 2004; Schneider et al. 2018).

Scholars have much less frequently probed channel (b): whether and how parents' cognitive skills shape selection into various environmental contexts that influence children's skill development. Unlike parenting tactics, the input of the neighborhood is often treated by skills scholars as "a statistical nuisance" (Sampson and Sharkey 2008: 1) to be controlled away, rather than as determined through a sociological sorting process worthy of examination. As a result, our growing understanding of how parents' cognitive skills yield skills-promoting parenting tactics is not matched by comparable knowledge of how these skills facilitate children's access to skills-promoting contexts.

Skills and Neighborhood Attainment in an Evolving Housing Market

Demographic and urban sociological research has taken the neighborhood sorting process as its object of analysis and thus serves as a useful framework in illuminating the skills-neighborhood link. Just as the classic status attainment model predicts the payoffs and penalties of individuals' race, social origins, and lifecycle stage to their income or occupational prestige, neighborhood attainment models estimate similar individual- and household-level factors' effects on neighborhood status, proxied by race and/or class composition (e.g., Alba and Logan 1993; Logan and Alba 1993; Pais 2017; Sampson 2012; Sampson and Sharkey 2008; South et al. 2016; South, Crowder, and Pais 2011). The model assumes all households aim to sort into the highest-status neighborhoods, typically

perceived as the richest (e.g., Sampson and Sharkey 2008) and often whitest (e.g., South et al. 2011), that they can. Realizing this preference, however, is contingent on the constraints imposed by individual- and household-level characteristics and by the degree of race and class discrimination within the housing market (see Bruch and Mare 2012; Krysan and Crowder 2017; Quillian 2015).

This structural orientation has generated a vigorous debate on whether and why race- and class-based gaps in neighborhood socio-demographics remain after accounting for individuals' socioeconomic circumstances. Generally speaking, the spatial assimilation perspective attributes race and class disparities in neighborhood socio-demographics to group gaps in status attainment markers, such as wages, wealth, and educational attainment. Accounting for these factors should substantially attenuate these group-based differences (Massey and Denton 1985). The alternative perspective, place stratification, holds that sizable residual gaps in race and class groups' neighborhood socio-demographics will remain, net of these characteristics. Stratification scholars frequently implicate discriminatory barriers erected by real estate agent and broker steering, zoning regulations, or other institutional mechanisms in preserving these gaps (Logan and Molotch 1987; Trounstine 2018).

Cognitive skills rarely factor into this important debate. Yet the context of inequality is changing in ways that may amplify their effects. Although persistently high levels of residential segregation underscore the enduring racial and class stratification of housing markets, we argue that evolving opportunity structures are creating avenues along which cognitive skills shape the sorting of individuals into the highest status neighborhoods they can afford. Large public housing developments that historically concentrated poor, minority households in the "inner city" have been demolished (Goetz 2011), and the ascendant housing strategy at both the federal and local level—housing vouchers—empower low-income households with more residential choices. Moreover, the

real estate industry has shifted from predominately small-scale operations relying on word-of-mouth referrals and covering narrow submarkets—conditions that facilitated discrimination—to large agencies that encompass broader geographies, employ internet-based marketing, and participate in fair housing training and minority recruitment (Anderson, Lewis, and Springer 2000; Ross and Turner 2005).

A simultaneous information explosion has saturated urban housing markets and transformed how Americans navigate them (Zumpano, Johnson, and Anderson 2003). Cognitive processing is increasingly incentivized or rewarded, especially in sprawling and fragmented metropolises, a dynamic few neighborhood attainment studies have explored. Given the advent of real-time, publicly available data on neighborhood quality and housing unit openings, the proliferation of digital tools facilitating connections with real estate brokers, financial institutions, and local authorities, and the link between cognitive skills and digital engagement (Tun and Lachman 2010), these skills conceivably shape both the intensity of individuals' preferences for neighborhoods with "ideal" conditions and their ability to overcome constraints to realize these preferences.

With regard to preferences, the information age renders the benefits of affluent neighborhoods more tangible by linking them to measurable quality indicators (e.g., school quality, crime, and housing value appreciation) via websites like NeighborhoodScout, Zillow, and Redfin. Those who more frequently, quickly, and efficiently process large amounts of often-complex information are likely most motivated to access these perceived amenities. Even if preferences for neighborhood status varied minimally by skills, cognitive skills plausibly enable individuals to overcome constraints to accessing units within highly coveted communities. The highly skilled may be more likely to track fluid neighborhood conditions, exhibit less difficulty finding high-value deals and navigating numerous institutional hurdles (e.g., housing applications, credit checks), and enjoy a

first-mover advantage in acquiring dwellings in high-status neighborhoods – especially neighborhoods on the rise (see also Özüekren and van Kempen 2002). Social dynamics may also be implicated. Just as real estate agents and landlords have long engaged in race- and class-based steering, they may also reward perceived market knowledge and deft communication skills with access to desirable dwellings and neighborhoods, cognitive-based steering as it were.

In short, we argue that while deeply stratified by race and class, contemporary housing markets increasingly reward, and perhaps even discriminate based on, information processing as well. These dynamics amplify the role of cognitive skills in shaping neighborhood attainment and reinforce inequality. Exploring the link between skills and residential sorting is particularly important as urban stratification scholarship expands to encompass the mechanisms driving the persistence of not only concentrated disadvantage but also concentrated affluence (Howell 2019; Owens 2016; Reardon and Bischoff 2011). A concrete hypothesis follows:

Hypothesis 1: In contemporary housing markets, parents with higher cognitive skill levels are more likely to sort into neighborhoods that are societally defined as high in status/desirability, even after accounting for parents' and neighborhoods' socio-demographic characteristics.

Social Class, Parents' Cognitive Skills, and the Quality of Children's Schools

Although revealing *whether* parents' skills predict neighborhood socioeconomic status would enrich contemporary accounts of residential sorting, it would not clarify precisely *how* parents' skills, household socio-demographics, and opportunity structures interact to reproduce spatial inequality. The traditional neighborhood attainment model obscures these finer-grained dynamics by assuming homogenous household preferences for neighborhood status, conceptualized primarily in socio-demographic terms, and implicating structural constraints. The model cannot readily distinguish whether skills – or other individual-level and household-level factors – generate variation in the

strength of parental preferences for a general notion of neighborhood desirability/quality, neighborhood race or class composition specifically, or correlated neighborhood amenities perceived as central to children's development, such as school quality (for similar critiques, see Bruch and Mare 2012; Goyette, Iceland, and Weininger 2014; Harris 1999; Owens 2016; Quillian 2015).

We argue that highly skilled parents with the economic means may disproportionately optimize for socially salient indicators of school quality, specifically, rather than neighborhood socioeconomic status, generally. Many studies suggest that highly educated and upper class parents use school test scores as proxies for neighborhoods' suitability for their children (e.g., Johnson 2014; Lareau and Goyette 2014). Further, the intergenerational skills literature reveals that cognitive skills predict knowledge of, and emphasis on, child-centered parenting tactics and investments, net of socioeconomic conditions (e.g., Bornstein et al. 1998). It follows that the most highly skilled group of advantaged parents may give greater weight to perceived child-optimizing neighborhood amenities, such as school test scores, over other neighborhood amenities desirable to high-income households (e.g., housing stock characteristics) than do their less-skilled peers. This disparity in prioritization could reflect, in part, a greater awareness among the most highly skilled parents that cognitive skill boosts in early ages foster an increased rate of skill growth later on (Cunha, Heckman, and Schennach 2010). Although school test scores do not necessarily equate with learning environments' quality (Schneider 2017), highly skilled parents – who themselves are likely to have high test scores – may be particularly likely to perceive a strong link between the two. In this way, skill-based sorting on the basis of school test scores may reflect socially shaped and self-fulfilling expectations.

Even if all advantaged parents exhibited comparable preferences for neighborhoods with high public school test scores, skill-based constraints could stratify their residential outcomes. The

highly skilled may more deftly overcome informational and institutional barriers to accessing neighborhoods with the highest scoring schools (e.g., by finding, interpreting, and tracking information on school catchment zones and school test scores). Advantaged parents who are less cognitively skilled may infer school quality from correlated proxies, such as neighborhood and school socio-demographic composition, or rely on word-of-mouth, rather than research school test scores. The highly skilled may also more readily identify, and elicit support from, key residential and institutional gatekeepers who plausibly reward the most knowledgeable and engaged parents, again a sort of cognitive steering. Among disadvantaged parents, however, class-based constraints, rather than skill-based constraints or preferences, likely stymie their efforts to foster skill development via the housing market (Rhodes and DeLuca 2014). Lower-income parents' strongly held preferences for school quality, for example, are often trumped by housing affordability and quality needs (see Johnson 2016; Lareau and Goyette 2014; Rich and Jennings 2015 for in-depth discussions of how race and class stratify parents' school quality evaluations).

We thus argue that it is not just social class, but skills interacting with class, that predict which parents access neighborhoods with the highest scoring public schools. Whether or not scores accurately measure the most developmentally enriching environmental contexts for their children, highly skilled and advantaged parents' propensity to sort on this basis yields a process analogous to "opportunity hoarding"(Reeves 2017; Trounstine 2018).

Hypothesis 2: Among socioeconomically advantaged parents, those with higher cognitive skill levels are more likely to sort into neighborhoods with higher K-12 school test scores, even after accounting for parents' and neighborhoods' socio-demographic characteristics.

We test our theoretical framework's two main hypotheses by employing a novel dataset of Angelenos' residential histories spanning a dozen years. Los Angeles County is a theoretically important, but relatively underexplored, urban ecology that is spatially distinct from and more

racially and ethnically diverse than geographies examined in prior residential mobility analyses (Sampson, Schachner, and Mare 2017). This race-ethnic diversity permits analysis of neighborhood sorting patterns among two rapidly growing but less frequently studied groups: Latinos and Asians. We also take seriously L.A.'s unique spatial structure by incorporating a network-based measure of spatial proximity into our models and, following Bruch and Swait (2019), by constructing more realistic choice sets that oversample neighborhood options from meaningful county sub regions.

Importantly, we incorporate a well-validated measure of cognitive skills and time-varying neighborhood-level measures of housing market conditions and school test scores. Moreover, our discrete choice framework captures heterogeneity in subgroups' residential patterns and disentangles sorting on multiple neighborhood features simultaneously. In contrast to many similar studies, we model both movers and stayers in our discrete choice analyses, providing a more nuanced portrait of residential decisions (Bruch and Mare 2012; Huang, South, and Spring 2017; Sampson and Sharkey 2008). The timeframe of our data, 2001-2012, spans an era of change in the region, including just before and after the Great Recession.

RESEARCH DESIGN AND MEASURES

This study is part of the Mixed Income Project (MIP)—a data collection effort aimed at examining neighborhood context, residential mobility, and income mixing in Los Angeles and Chicago. MIP evolved out of two anchor studies, L.A.FANS and the Project on Human Development in Chicago Neighborhoods (PHDCN). L.A.FANS wave 1 data collection was conducted in 2000-2002, with a probability sample design that selected 65 Los Angeles County neighborhoods (census tracts) and, within each tract, a sample of randomly selected households. Within the 3,085 households that completed household rosters, researchers attempted to interview one randomly selected adult (RSA)

and, if present, one randomly selected child (RSC), the child's primary caregiver (who could, or could not be, the RSA), and a randomly selected sibling of the RSC. The RSC's mother was designated as the primary caregiver (PCG) unless she was not in the household or could not answer questions about the child. In these cases, the child's actual primary caregiver received the PCG designation. Ultimately, 1,957 PCGs completed a wave 1 interview, of whom 21 percent were white, 60 percent were Latino, 8 percent were black, and 7 percent were Asian American/Pacific Islander. The remainder were Native American or multiracial.

Wave 1 respondents received follow-up interviews between 2006 and 2008 (response rate 63%) if they still resided within L.A. County (85% of the contacted sample). Approximately 2,000 RSA and RSC respondents completed interviews during waves 1 and/or 2 of L.A.FANS, rendering them eligible for MIP between 2011-2013. A randomly selected subset of eligible respondents was contacted for a wave 3 interview. After excluding those selected respondents who left L.A. County or who were institutionalized, incapacitated, or deceased, 1,032 wave 3 interviews were ultimately completed (response rate 75%). 300 MIP respondents were PCGs at wave 1. Crucially, each data collection wave tracked a continuous record of respondents' residential locations over the interim years, enabling residential histories spanning approximately 2000 through 2013. For more details on L.A.FANS and MIP, see Sampson et al. (2017) and Sastry et al. (2006).

Because this study centers on skill-based residential sorting among parents, we examine neighborhood selection among respondents who were: designated as PCGs at wave 1, confirmed to have completed a survey and to have been L.A. County residents at all three data collection efforts, and for whom cognitive skill measures and network distance calculations between their origin and potential destination neighborhoods were available. Two-hundred eighty-four primary caregivers fit

these specifications, and most have continuous census tract-coded residential history data from 2001 through 2012. See Appendix B for more details.

Neighborhood-level Measures

Our outcome of interest is a binary measure indicating whether a given census tract within a choice set of plausible options was selected by a given household in a given year (1 indicates the tract was selected, 0 indicates it was not). We predict this outcome as a function of neighborhood-level covariates and their interactions with both household-level and individual-level characteristics. We include an annually estimated *tract status index*, constructed as the mean of a tract's standardized (1) median family income (logged) and (2) bachelor's degree or higher (%) – two common proxies for neighborhood status or desirability broadly defined.[1] We also include tract *racial composition* to test whether racial homophily confounds sorting by neighborhood socioeconomic status (Quillian 2015).

Our other core measure at the neighborhood level is an annual estimate of *K-12 test scores*. Consensus on calculating school quality at the neighborhood level remains elusive. Given our focus on how parents' neighborhood perceptions shape residential decisions, we start with a parsimonious, widely disseminated school quality measure – average test scores – that is available via the Internet and local newspapers. To generate a neighborhood-level measure, we use GIS to overlay county-provided school catchment boundaries from 2002 with 2000 census tract boundaries and weight each school's test scores based on the proportion of the tract's area its catchment zone covers. We

[1] By combining the highly correlated measures (~0.8) together into one index, we mitigate multicollinearity concerns that would arise from including both variables in our models. The index is correlated 0.96 with each component variable, suggesting it is a strong neighborhood status proxy. The measure's construction also renders it easily interpreted, with a mean around zero and a standard deviation of approximately one.

run this merge separately for elementary, middle, and high schools and then average the three tract measures to create a yearly neighborhood K-12 test score measure (see Appendix B). Although some children attend magnet, charter or private/parochial schools instead of their local catchment school, approximately 90% of L.A.FANS panel children attended traditional public schools at wave 1 or 2. Catchment school quality is likely salient to the vast majority of parent respondents.[2]

We employ several neighborhood-level controls. A binary variable indicates whether the selected tract in a given year is the respondent's *origin tract*, the neighborhood of residence at t - 1 (1 indicates stayer in a given year, 0 indicates mover), enabling us to capture both movers' and stayers' residential decisions (see Bruch and Mare 2012). We interact this control with tract K-12 test scores, measured during the year of the move, to test whether higher scores not only attract certain households but dissuade them from leaving. We also track *network distance* (i.e., road length in miles, rather than point-to-point distance) between neighborhood destination options and the origin tract using ArcGIS, given that familiarity and networks shape residential choices (Krysan and Crowder 2017). Traditional neighborhood-level controls used by prior sorting studies – *owner occupancy rate (%)* and *number of housing units (logged)* – are also included. The latter proxies housing availability (Bruch and Mare 2012; Gabriel and Spring 2019; Spring et al. 2017). For our discrete choice models, we

[2] Even parents of children who do not attend their catchment-assigned school likely consider metrics of quality in the local public schools given their impact on shared perceptions of neighborhood desirability, which influences housing price appreciation and sales potential.

convert all tract variables, except for origin tract and network distance, into standardized measures to facilitate comparisons of their effects with that of the tract status index variable.[3],[4]

Parental Cognitive Skills and Individual/Household-level Measures

Our primary individual-level characteristic of interest is parents' cognitive skills, typically conceptualized in the skills and stratification literature as acquired knowledge (Heckman et al. 2006; Kautz et al. 2014). L.A.FANS collected skill measures only for PCG and child respondents. We use PCGs' wave 1 results from the Woodcock-Johnson *Passage Comprehension* assessment, conducted in either English or Spanish. The test captures individuals' ability to process written information, a theoretically important skill for evaluating neighborhood options, by asking test takers to identify missing key words from short passages of increasing complexity. We convert the national percentiles rankings generated by the test into sample-based tercile rankings to capture nonlinear effects. Wave 1 skill terciles are applied across all years because the data are considerably more complete, and cognitive skills tend to stabilize in adulthood (Roberts, Walton, and Viechtbauer 2006; Rönnlund,

[3] Yearly estimates for all ACS-derived tract-level variables are based on the middle year of each ACS timeframe (e.g., ACS 2005 – 2009 is used for 2007 estimates). We linearly interpolate values from decennial census 2000 and ACS 2005-2009 data for 2001-2006 estimates, given tract-level data availability gaps.

[4] Tract-level variables' missing data rates are trivial, except for network distance between origin and potential destination tracts (~1%) and tract K-12 test scores (~7%). Network distance missing values are imputed based on the average distance between a tract within the respondent's L.A. County region of origin and a tract within the choice set tract's county region. Missing tract K-12 test score values are imputed based on predicted values from a regression including tracts' housing and socio-demographic characteristics and year fixed effects. Model results are robust to excluding imputed values.

Sundström, and Nilsson 2015). Passage comprehension scores are highly correlated with scores generated by Woodcock-Johnson tests gauging other cognitive skill types.[5]

We include commonly employed predictors of neighborhood sorting as controls: *race-ethnicity*, *household income quintile*, and *bachelor's degree* or higher. The latter two are annually interpolated based on estimates from the three data collection efforts. Household income is standardized to year 1999 dollars and converted into a quintile ranking. To test our argument linking skills to neighborhood K-12 test scores among advantaged parents (Hypothesis #2), we use the time-varying bachelor's degree and household income quintile variables to stratify the sample. The upper/middle-upper class sample includes primary caregivers who hold a bachelor's degree or reside within a household in the fourth or fifth income quintiles within a given year. The middle/working class sample includes all other primary caregivers.[6]

ANALYTIC STRATEGY

We employ discrete choice models to evaluate whether parents' cognitive skills interact with neighborhood status to produce residential sorting outcomes for the full sample, and whether these skills interact with tract K-12 test scores, specifically, rather than status among advantaged parents.

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[5] Among L.A. FANS panel respondents who were children at wave 1 but aged into adulthood by wave 2 and retook Woodcock-Johnson tests at that time, passage comprehension module percentile rankings correlate 0.6-0.8 with broad reading, math reasoning, applied problems, and letter word identification rankings. Ideally, we would replicate our core results using these others skill measures and a composite skill measure that averages scores across modules. However, L.A.FANS only fielded the passage comprehension module to PCG respondents. Nonetheless, we believe this module captures important dimensions of the contemporary housing search, such as the accuracy, and perhaps frequency, of processing and contextualizing written information.

[6] All individual/household-level measures contain complete data for the analytic sample except for household income (~15% is missing data for one or more waves). To estimate missing values, we use the imputed wave 3 household income values calculated by Sampson et al. (2017), which employ a wide range of covariates.

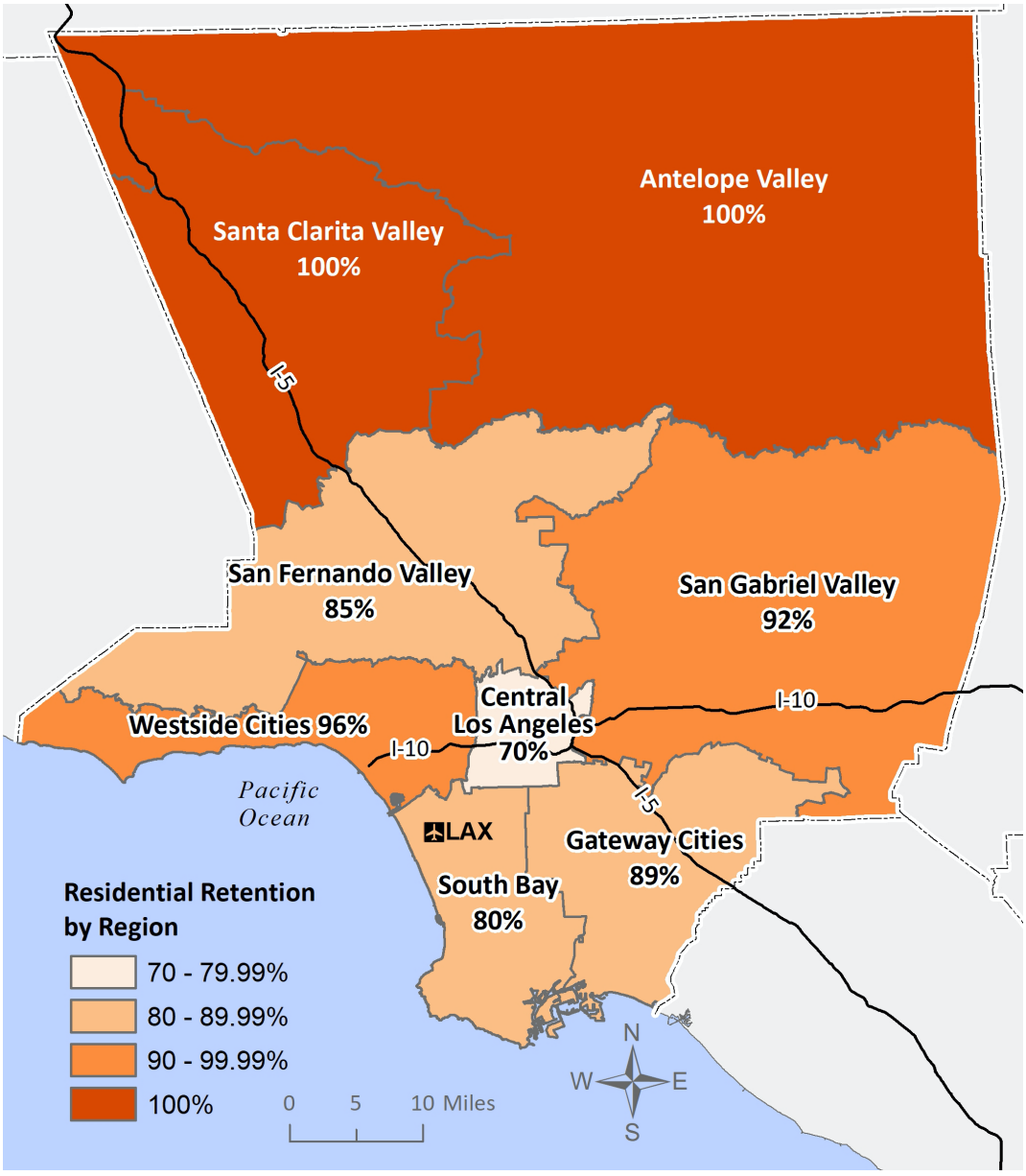
These models conceptualize selection as a process in which individuals examine a specific set of available options and select one with characteristics that most closely match their preferences and constraints. Interactions between characteristics of the choosers and of the choice options reveal heterogeneity among subgroups in preferences and/or constraints vis-à-vis particular option characteristics. (For recent examples of discrete choice models of neighborhood sorting, see Bruch and Swait 2019; Gabriel and Spring 2019; van Ham, Boschman, and Vogel 2018; Logan and Shin 2016; Quillian 2015; Spring, et al. 2017).

Our study's choice of interest is the tract destination at time *t* – a binary outcome – modeled as a function of multiple neighborhood-level characteristics and interactions of these characteristics with individual-/household-level characteristics. The data structure consists of various person-period-tract options, which capture a sample of neighborhood choices available to the individual in a given period, including the tract actually chosen, which is marked 1; all other choice set options are marked 0.

Consensus on two data structure features remains elusive: (1) whether the choice set should include the tract chosen in the prior period (i.e., the origin tract) and (2) how the neighborhood choice set should be conceptualized and constructed. Following Bruch and Mare (2012), we include both stayers and movers in our analytic sample and use the binary origin tract indicator to gauge whether the household is mobile within a given year. As for the neighborhood choice set, residential mobility studies typically use a random sample of all tracts in a metropolitan area (Bruch and Mare 2012; van Ham et al. 2018; Quillian 2015; Spring et al. 2017), but we opt for a different tack that takes into account L.A.'s unique spatial structure. We first assign all county tracts to one of eight geographic regions – Central Los Angeles, San Fernando Valley, San Gabriel Valley, Gateway Cities, South Bay, Westside Cities, Santa Clarita Valley, and Antelope Valley – which, based on our analysis,

tend to retain high proportions of residents over time (Figure 1.1). Similar to Bruch and Swait (2019) who examine "cognitively plausible" neighborhood choices among Angelenos, we use these regions to shape respondents' choice sets. For each person-year combination we construct a choice set of tract options, consisting of the tract selected; the person's tract of residence during the prior year (i.e., the origin tract); and 49 to 50 randomly-sampled tracts, drawing about half from the respondent's county region of residence in the prior year, and about half from the entire county. This approach yields a choice set of 50 to 51 tracts for all 3,317 person-periods and 284 unique primary caregivers, generating a total core analytic sample of 167,342 person-period-tract alternatives. See Appendix B.

FIGURE 1.1
Residential Retention Rate by Los Angeles County Region:
LA FANS-MIP Longitudinal Study, Randomly Selected Adults



Source: Authors' calculations using L.A.FANS-MIP Longitudinal Study, as well as schematic maps from various Los Angeles County governmental agencies and the *Los Angeles Times'* "Mapping L.A." Project.

Notes

[a] The numbers indicate the percentage of randomly selected adult respondents who resided within the same region of Los Angeles County during both waves 1 and 3 of the LA FANS-MIP Longitudinal Study (*N*=612), regardless of whether they moved residences. For more details on this analytic sample of randomly selected adults, see Sampson, Schachner, and Mare (2017).

We follow Quillian (2015) in translating this data structure into a formal discrete choice model of neighborhood selection consisting of two core components. The first, Equation 1, estimates U_{ijt}, which represents neighborhood *j*'s attractiveness to individual *i*, in year *t*. If we consider just two household characteristics (X_1, X_2) and two neighborhood features (Z_1, Z_2), and assume a probability distribution of the unobserved neighborhood characteristics influencing attractiveness, then the neighborhood attractiveness model's nonrandom portion is represented by:

$$\textbf{(1)}\ \widehat{U}_{ijt} = \beta_1 Z_{1it} + \beta_2 Z_{2it} + \delta_{11} Z_{1it} X_{1it} + \delta_{21} Z_{2it} X_{1it} + \delta_{12} Z_{1it} X_{2it} + \delta_{22} Z_{2it},$$

where β_k represents the attractiveness of neighborhood *j*'s characteristic *k* at time *t* (Z_{kjt}) and δ_{km} represents the interaction effect of neighborhood *j*'s characteristic *k* at time *t* and individual *i*'s characteristic *m* (X_{mit}) on neighborhood attractiveness at time *t*.[7] Individuals' characteristics only influence neighborhood attractiveness through their interactions with neighborhood features. Assuming the errors follow an extreme value (Gumbel) distribution, a discrete choice conditional logit model generates a predicted probability of individual *i* selecting neighborhood *j* at time *t* (Equation 2):

$$\textbf{(2)}\ p_{ijt}\left(Z_{kjt}, X_{mit}, C_{(i)}\right) = \frac{\exp\left(\widehat{U}_{ijt} - q_{ijt}\right)}{\sum_{w=1}^{C(i)} \exp\left(\widehat{U}_{ijt} - q_{iwt}\right)}$$

$C_{(i)}$ represents the neighborhood choice set for individual *i*, and w is an index used to sum over elements of this set for the *i*th individual. We follow prior analyses in incorporating an offset term (q_{ijt}) into our models to differentially weight tract options based on the probability of the tract entering the choice set for a given person-year via the sampling procedures described above (see Appendix B).

[7] We use the term "effect" to remain consistent with the discrete choice literature's language, while recognizing the limitations of our data and empirical strategy in identifying causal parameters.

The model's maximum likelihood procedures yield a predicted probability that each neighborhood within the individual's choice set will be selected based on a set of estimated coefficients indicating neighborhood characteristics' positive or negative effects on a neighborhood's attractiveness (main effects) and whether these effects are strengthened or attenuated by the individual/household characteristics (interaction effects). We convert these coefficients into odds ratios to facilitate interpretation. Odds ratios above 1 suggest the neighborhood characteristic increases the likelihood of residence directly or in interaction with an individual/household characteristic; odds ratios below 1 indicate a depressive effect. We discuss a common concern regarding the accuracy and interpretation of conditional logit models' results in the Appendix B.

DESCRIPIVE RESULTS

Table 1.1A reveals that whites and Latinos constitute 28 and 47 percent of the weighted analytic sample, respectively, while Asians are 13 percent and blacks are 9 percent. This mix enables us to examine sorting patterns among all four major race-ethnic groups– a key benefit compared to prior neighborhood sorting analyses. The categorical classification of Woodcock-Johnson passage comprehension scores indicates a low skew compared to the national distribution: the sample's middle tercile spans national percentile ranks 10 – 30.

A simple correlation matrix (Table 1.1B) presents unconditional associations between primary caregivers' individual-level and household-level attributes measured at baseline and operationalized in continuous, rather than categorical, terms for passage comprehension and household income to maximize specificity. One might expect classic indicators of adult socioeconomic attainment – household income and bachelor's degree – to strongly correlate with cognitive skill levels, indicating skill effects on neighborhood outcomes are likely absorbed by

socioeconomic effects. In fact, this is not the case. Passage comprehension score (measured in continuous terms) is only correlated about 0.30 with household income (logged) and 0.38 with possession of a bachelor's degree, meaning that substantial residual variation in skill levels remains net of these factors.

TABLE 1.1
Descriptive Statistics and Correlations:
LA FANS-MIP Longitudinal Study, Primary Caregivers (*N* = 284)

A. Person-level attributes (measured at baseline)

Variable	Mean	S.D.	Min	Max
Age	35.19	7.86	19	67
Race/ethnicity				
White	0.28	0.45	0	1
Latino	0.47	0.50	0	1
African-American/Black	0.09	0.28	0	1
Asian/Pacific Islander	0.13	0.34	0	1
Other	0.03	0.18	0	1
Socioeconomic Status/Education				
Household income (1999 constant $)				
< $16,000	0.18	0.39	0	1
$16,000 – 27,999	0.21	0.41	0	1
$28,000 – 41,999	0.21	0.41	0	1
$42,000 – $65,999	0.20	0.40	0	1
$66,000+	0.20	0.40	0	1
Bachelor's degree or higher	0.19	0.39	0	1
Cognitive Skills				
W-J passage comp. national rank				
< 10 percentile	.34	0.47	0	1
10 – 30 percentile	.34	0.47	0	1
> 30 percentile	.32	0.47	0	1

B. Correlation matrix of person-level attributes (measured at baseline)

	Passage comprehension	Household income (log)	Bachelor's degree +
Passage comprehension	*	0.3032	0.3811
Household income (log)	0.3032	*	0.3788
Bachelor's degree +	0.3811	0.3788	*
White	0.3491	0.1769	0.1362
Latino	-0.2545	-0.3392	-0.3019
African-American/Black	-0.0098	0.0335	0.0020
Asian/Pacific Islander	-0.1388	0.2018	0.2479

Notes

[a] Means are weighted, reflective of all nonmissing observations, and measured at wave 1. Baseline values of bachelor's degree or higher and household income (log) represent educational attainment and estimated annual income for the earliest year available, usually 2000 or 2001.

[b] Correlation values capture weighted unconditional correlations based on continuous rather than categorical values of observations without missing data and/or with imputed data on the two variables in question. However, correlation values are similar when categorical values of passage comprehension and household income variables are applied (results available upon request).

Chosen and nonchosen tract attributes (Table 1.2A) reveal that, on average, 94 percent of the sample remained within their origin tract during a given year. Chosen neighborhoods' race/ethnic distribution confirms L.A. County's distinctiveness relative to the rest of the country. The average share of Asian and especially Latino residents – approximately 13 and 50 percent – is strikingly high relative to other U.S. urban areas. Whites and blacks constitute an average of about 28 and 7 percent of chosen tracts, respectively.

Unconditional associations between individual/household-level and chosen tract-level attributes, as well as chosen tract-level attributes associations with each other, provide preliminary clues about the skills-neighborhood link (Tables 2B & 2C). Comparing the correlation between cognitive skills and *neighborhood*, rather than *household*, socioeconomic characteristics suggests cognitive skills may influence neighborhood outcomes directly and perhaps shape neighborhood attainment more than socioeconomic attainment. Passage comprehension scores are correlated 0.47 with the time-varying neighborhood status index, but only 0.30 with baseline household income (logged).

TABLE 1.2

Descriptive Statistics and Correlations: Time-Varying Person & Tract Attributes of Analytic Sample

A. Person-year-tract attributes (time-varying), *N* = 167,342

	Chosen Tracts		Nonchosen Tracts	
Variable	Mean	S.D.	Mean	S.D.
Origin tract	0.94	0.24	0.001	0.04
Network distance from origin (mi)	0.41	2.60	19.22	16.58
# housing units (logged)	7.55	0.39	7.29	0.52
% Owner-occupied	52.02	24.06	51.16	26.42
% White (ref)	27.74	24.70	29.98	27.16
% Black	6.85	8.79	8.76	14.23
% Latino	50.12	28.04	46.15	29.31
% Asian	12.75	13.03	12.44	15.16
Tract status index	-0.12	0.84	-0.02	0.92
Tract K-12 test scores	701.29	89.74	699.58	95.31
N (person-year-tracts)	3,317		164,025	

B. Correlation matrix of person, person-year, and chosen tract attributes, *N* = 3,317

Person and Person-Year Attributes	Tract Status Index	Tract K-12 Test Scores
Passage comprehension	0.4723	0.3777
Household income (log) (time-varying)	0.6185	0.5110
Bachelor's degree+ (time-varying)	0.4179	0.3351
White	0.3864	0.3122
Latino	-0.4687	-0.4172
African-American/Black	-0.0932	-0.1057
Asian/Pacific Islander	0.2547	0.2686

C. Correlation matrix of chosen tract attributes (time-varying), *N* = 3,317

Tract Variables	Tract Status Index	Tract K-12 Test Scores
Tract Status Index	*	0.7792
Tract K-12 test scores	0.7792	*
% Owner-occupied	0.5006	0.3917
% White	0.8725	0.7024
% Black	-0.2475	-0.3602
% Latino	-0.8568	-0.7115
% Asian	0.2996	0.3860

Notes

[a] Means are weighted and reflective of all nonmissing observations between the years of 2001 and 2012.

[b] Correlation values capture weighted unconditional correlations based on continuous rather than categorical values of observations without missing data and/or with imputed data.

DISCRETE CHOICE MODELS

Congruent with the focus of previous neighborhood attainment studies, our first core analysis (Table 1.3, Model 1) gauges racial differences in tract status sorting while accounting for controls, including: the origin tract indicator, network-based spatial proximity between the origin tract and choice set options, housing availability and homeownership rates. As expected, households are far more likely than not to remain in place in a given year (OR = 2089.19, $p < 0.01$). When they do move, network distance is important; the further the neighborhood option is from the origin neighborhood, the less likely it is to be selected (OR = 0.80, $p < 0.01$). Housing markets also matter. Neighborhoods with more housing units are more likely to be selected by parents (OR = 1.67, $p < 0.01$), as are those with a higher owner occupancy rate (OR = 1.36, $p < 0.01$). Confirming the urban stratification literature's longstanding findings, Latino and black race/ethnicity interact with the tract status index to reduce the likelihood of sorting (ORs = 0.4, $p < 0.01$) net of non-racial tract-level controls and an age – tract status interaction control.

TABLE 1.3

Sorting Effects of Respondent Attributes and Structural Tract Characteristics on Residential Choice, Conditional Logit Models
(Person N = 284; Person-Years N = 3,317, Person-Year-Tract Alternatives N = 167,342)

	Model 1		Model 2		Model 3		Model 4	
Variables	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.
Destination tract attributes								
Origin tract	2089.187*	544.02	2037.944**	532.40	2023.873*	533.073	1914.149**	496.557
Network distance in miles from origin	0.798**	0.030	0.799**	0.030	0.799**	0.030	0.801**	0.030
# housing units (log)	1.671**	0.196	1.749**	0.209	1.757**	0.211	1.891**	0.233
% Owner-occupied	1.359**	0.155	1.402**	0.157	1.411**	0.157	1.433**	0.169
Tract status index	1.404	0.636	0.899	0.438	0.829	0.394	0.572	0.353
% Latino							0.871	0.217
% Black							0.845	0.092
% Asian							1.112	0.104
Interaction of individual & tract attributes								
Age X Tract status index	0.998	0.010	0.988	0.011	0.981	0.011	0.987	0.011
Latino X Tract status index	0.409**	0.058	0.557**	0.080	0.623**	0.096	1.071	0.285
Black X Tract status index	0.448**	0.102	0.505**	0.118	0.605*	0.154	0.653	0.162
Asian X Tract status index	1.609	0.545	1.406	0.415	1.897*	0.573	1.901	0.682
Latino X Tract % Latino							1.923**	0.470
Black X Tract % Black							1.449*	0.251
Asian X Tract % Asian							1.138	0.312
Household income Q2 X Tract status index			1.157	0.234	1.208	0.237	1.229	0.255
Household income Q3 X Tract status index			1.306	0.276	1.208	0.263	1.269	0.298
Household income Q4 X Tract status index			2.232**	0.505	2.040**	0.463	2.111**	0.494
Household income Q5 X Tract status index			3.258**	1.005	2.775**	0.832	2.979**	0.977
Bachelor's degree X Tract status index			1.157	0.292	1.079	0.264	1.056	0.306
Med. passage comp. X Tract status index					1.275	0.224	1.208	0.220
High passage comp. X Tract status index					1.856**	0.420	1.702*	0.357

Notes

[a] Models include standardized measures of all census-derived tract-level variables, analytic weights based on L.A.FANS/MIP sampling procedures and attrition, and the offset term, $-\ln(q_{ijt})$, for sampling the choice set.

[b] Standard errors are clustered by persons.

[c] $*p < .05$, $**p < .01$ (two-tailed test).

These racial interaction effects are only modestly attenuated after controlling for household income differences across racial groups (Table 1.3, Model 2: ORs = 0.5 – 0.6, $p < .01$). Also, in line with prior urban stratification analyses, class-based neighborhood sorting appears important, net of race. The second highest and highest income quintiles interact with tract status to increase the likelihood of selection, generating ORs of 2.23 and 3.26 ($p < 0.01$), respectively. Interestingly, educational background, proxied by bachelor's degree attainment, does not significantly predict sorting when controlling for race, income, and age.

Cognitive Skills and Neighborhood Status

After accounting for structural sorting patterns, do parents' cognitive skills also predict neighborhood attainment? Indeed they do, especially at the top end of the skills distribution. Model 3 in Table 1.3 preserves all covariates from the traditional neighborhood attainment model (Model 2) but adds interaction terms capturing heterogeneous sorting on neighborhood status by passage comprehension tercile. The top tercile passage comprehension-tract status interaction term is strongly significant, net of race-, class-, and education-based sorting patterns (OR = 1.86, $p < 0.01$). The racial and income quintile interaction terms' odds ratios attenuate very slightly when compared to the previous model, suggesting skills play a modest role, at best, in mediating race- and class-based neighborhood sorting patterns.

Model 4 extends beyond the traditional neighborhood attainment model by incorporating neighborhood-level racial composition controls and racial homophily interaction terms. Recent studies employing discrete choice models document significant racial homophily patterns that may partially account for the observed propensity of blacks, in particular, to sort into lower status

neighborhoods (Quillian 2015). Our results reinforce this possibility. When racial homophily terms are included, they are significant among Latinos (OR = 1.92, $p < 0.01$) and among blacks (OR = 1.45, $p < 0.05$). Moreover, the racial interaction terms with tract status become non-significant. However, importantly, the top tercile passage comprehension-tract status interaction term attenuates only slightly, remaining significant net of race-, class-, and education-based status sorting and racial homophily patterns (OR = 1.70, $p < 0.05$).[8]

We illustrate the magnitude of cognitive skill – neighborhood status interaction terms for the full analytic sample (Model 4, Table 1.3) by stratifying top and bottom skill tercile parents and comparing each subgroup's (a) predicted conditional probability of residing within tracts at various points in the neighborhood status distribution to (b) the probability of selecting a random tract from their choice sets. Higher ratios indicate a disproportionate likelihood of selecting a certain tract type over other options (see Logan and Shin 2016 for more detail on this type of simulation). Figure 1.2 suggests that, all else equal, top skill tercile respondents are 0.5 to 0.7 times as likely to select a tract within the two lowest neighborhood status quintiles as they are to select a random tract in their choice sets. This ratio approaches 1 within the middle tract status quintile and then ascends toward 1.5 between the fourth and fifth quintiles, indicating high scorers are nearly 50 percent more likely to select a tract within the highest status quintile as they are to select any given tract in their choice set. Conversely, bottom-tercile parents are much more likely to select a neighborhood within the two

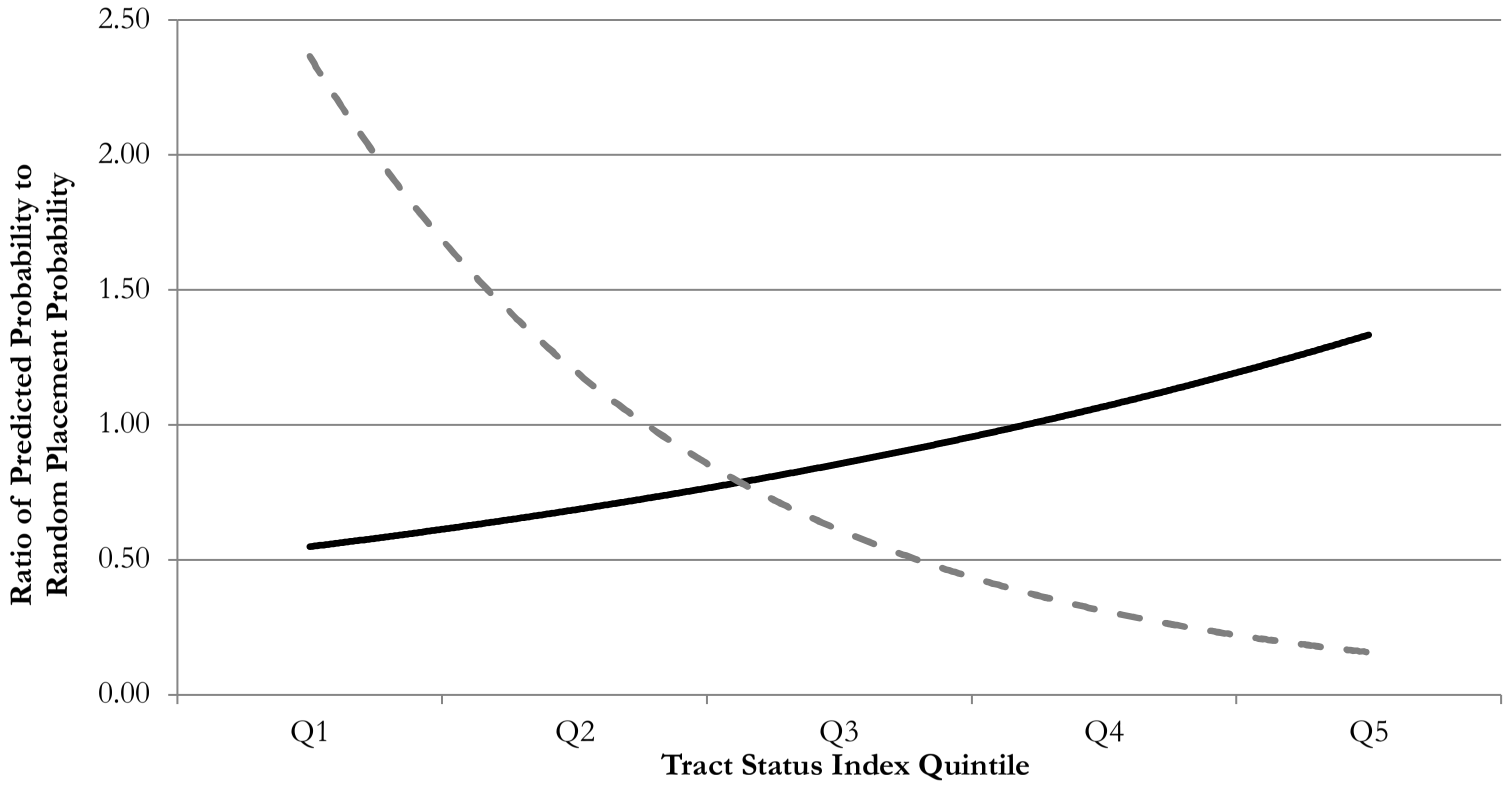
[8] By comparing Model 4 to an identical model that excludes skill interactions with tract status, racial homophily interaction terms are virtually identical in odds ratios and significance (results available upon request), suggesting that skill-based status sorting does not mediate racial residential homophily patterns.

lowest quintiles and much less likely to select a neighborhood within the two highest affluence quintiles than they are to select a random tract within their choice sets.[9]

[9] Large relative differences in predicted versus random selection probabilities reflect small absolute differences, given the tendency of residents to remain stationary—another dimension of how inequality is reproduced (Huang, South, and Spring 2017; Sampson and Sharkey 2008). Yet simulation models suggest even small group-based divergences in mobility and location propensities can generate major group-based disparities at the population level (Bruch and Mare 2006; Schelling 1971).

FIGURE 1.2

Conditional Predicted Probability of Living in a Given Neighborhood (Ratio to a Random Placement)
By Tract Status Index and Individual-level Passage Comprehension Tercile



Notes

[a] Predicted probabilities are derived from Table 1.3, Model 4, and ratios are exponentially smoothed.

Similar results are generated using models that are nearly identical to Table 1.3, Model 4 but specified on a sample excluding long-term stationary residents (i.e., 10+ years in the same tract) or on a sample of person-years in which parents moved tracts. In both samples, the tract status - top skill tercile interaction odds ratio attenuates slightly compared to Table 1.3, Model 4. In the former model, the interaction reduces to 1.60 (from 1.70). In the mover-only model, the same `interaction reduces from 1.70 to 1.67 (Appendix A: Table A1). Employing the full analytic sample (movers and stayers) and operationalizing parents' cognitive skill scores in continuous, rather than categorical, terms yields a significant skill – tract status index interaction exceeding 1 (OR = 1.19, $p < 0.01$) (Appendix A: Table A2). Overall, our findings support Hypothesis #1: parents' cognitive skills influence neighborhood attainment processes, net of age-, race-, class-, and education-based neighborhood status sorting and racial homophily.[10]

Falsification checks based on theoretical expectations reinforce these findings. The parental skills-neighborhood status link is *not* significant among parents who still reside with their own parents as of waves 1 or 2 and among parents who no longer have children under 18 in their household by wave 2. By contrast, among parents whose households contain elementary school-aged children (i.e., under 12) in both waves 1 and 2, the skill-neighborhood status interactions strengthen in magnitude. Both the middle skill tercile (OR = 1.53, $p < 0.05$) and top skill tercile (OR = 1.95, $p < 0.01$) are significant, suggesting neighborhood status is particularly salient to highly skilled parents of *young* children (Goyette et al. 2014) (Appendix A: Table A3).

[10] Additional robustness check models included excluding the offset term and incorporating interactions for origin tract and: household income, skills, and neighborhood status. Model results are not substantively changed compared to Table 1.3, Model 4.

Class, Skills, and Neighborhood K-12 Test Scores

We now evaluate our second hypothesis testing whether, among upper/middle-upper class parents, cognitive skills are associated with sorting on K-12 test scores, specifically, rather than neighborhood status generally. Model 1 in Table 1.4 employs Model 4 in Table 1.3 as a base but specifies the analytic sample to only include parents who are bachelor's degree holders or within the top two income quintiles in a given year. We interact tract K-12 test scores with parents' cognitive skill tercile, as well as with age, household income (logged), and origin tract as controls. Model 1 supports Hypothesis #2. Advantaged parents within the top skill tercile are much more likely to sort into neighborhoods with higher-quality schools (OR = 5.60, $p < 0.01$), as are those within the middle skill tercile (OR = 4.96, $p < 0.01$).[11] Significant skills-K-12 test score interactions are replicated in a similar model specification limited only to bachelor's degree holders (results available upon request). We also confirm the same patterns do not hold among less advantaged parents: The Model 1, Table 1.4 specification applied to a sample of parents *without* a bachelor's degree and in the bottom three income quintiles in a given year generates a non-significant cognitive skill- tract K-12 scores interaction (Model 2, Table 1.4).

[11] Parents plausibly use schools' socio-demographic properties, rather than test scores, to infer school quality, especially given the well-established link between the two (Rich 2018). Because our models control for sorting on neighborhood racial and economic status, we partially account for this possibility, though future research probing this concern is necessary.

TABLE 1.4

Sorting Effects of Respondent Attributes, Structural Tract Characteristics, and Tract K-12 Test Scores on Residential Choice by Educational Attainment, Conditional Logit Models

	Model 1 Upper/ Upper-Middle Class		Model 2 Middle/ Working Class	
Variables	O.R.	S.E.	O.R.	S.E.
Destination tract attributes				
Origin tract	1172.966**	380.330	2438.635**	1041.378
Origin tract X tract K-12 test scores	1.126	0.189	0.837	0.154
Network distance in miles from origin	0.748**	0.040	0.835**	0.039
# housing units	2.802**	0.566	1.370*	0.186
% Owner-occupied	2.021**	0.389	1.066	0.152
% Latino	0.901	0.295	1.175	0.336
% Black	0.607	0.166	1.132	0.187
% Asian	1.043	0.112	1.168	0.166
Tract status index	0.712	0.657	1.788	1.256
Tract K-12 test scores	1.804	1.636	0.654	0.490
Interaction of individual & tract attributes				
Age X Tract status index	1.010	0.023	0.968	0.017
Age X Tract K-12 scores	0.953	0.025	1.032*	0.015
Latino X % Latino	1.845**	0.427	1.783**	0.304
Black X % Black	1.447	0.353	1.718*	0.444
Asian X % Asian	1.254	0.367	2.316**	0.289
Household income (log) X Tract status	1.773**	0.315	1.052	0.275
Household income (log) X Tract K-12 scores	1.181	0.189	1.271	0.330
Med. passage comp. X Tract status	0.457*	0.147	1.392	0.503
High passage comp. X Tract status	0.441	0.190	2.026	0.843
Med. passage comp. X Tract K-12 scores	4.962**	2.202	0.675	0.225
High passage comp. X Tract K-12 scores	5.599**	2.316	0.668	0.251
Observations				
Number of persons	165		201	
Number of person-years	1,476		1,841	
Number of person-year-tract alternatives	74,522		92,820	

Notes

[a] Upper class defined as primary caregivers with a bachelor's degree *or* within the top two income quintiles of household income. Middle/working class defined as primary caregivers without a bachelor's degree and in bottom three income quintiles of household income.

[b] Models include standardized measures of tract K-12 scores, all census-derived tract-level variables. and the continuous household income (logged) variable; analytic weights are based on L.A.FANS/MIP sampling procedures and attrition; and the offset term, $-\ln(q_{ijt})$, for sampling the choice set.

[c] Standard errors are clustered by persons.

[d] $*p < .05$, $**p < .01$ (two-tailed test).

Does the observed skills-tract K-12 test scores link among advantaged parents primarily reflect skill-based variation in *preferences* for, or *constraints* to, accessing neighborhoods with high-quality schools? A preferences account suggests that among upper/middle-upper class class parents, the highly skilled prioritize child-optimizing neighborhood amenities, such as schools with high test scores, compared to other neighborhood features than do the less skilled. A constraints perspective might hold that the highly skilled more deftly overcome informational and institutional barriers and ingratiate themselves to, or are less discriminated against by, key residential and educational gatekeepers than the less skilled.

Our discrete choice models cannot cleanly clarify whether preferences, constraints, or both underlie skill-based sorting on tract K-12 test scores among advantaged parents (see Quillian 2015's discussion of this preferences versus constraints concern). Although the skill-based parenting and concerted cultivation literatures suggest skill-based preferences rather than constraints may predominate in neighborhood selection among advantaged parents, to our knowledge, a definitive resolution remains elusive. Thus, we opt to exploit descriptive data bearing on this question.

Figure 1.3A reveals the proportion of L.A.FANS primary caregivers who participated in wave 1, regardless of MIP inclusion, and who moved residences within the prior five years, that reported in wave 1 that proximity to good schools motivated their neighborhood choice. Congruent with concerted cultivation studies, upper/middle-upper class parents are much more likely, overall, to report access to good schools for their kids as a mobility driver than are other parents.

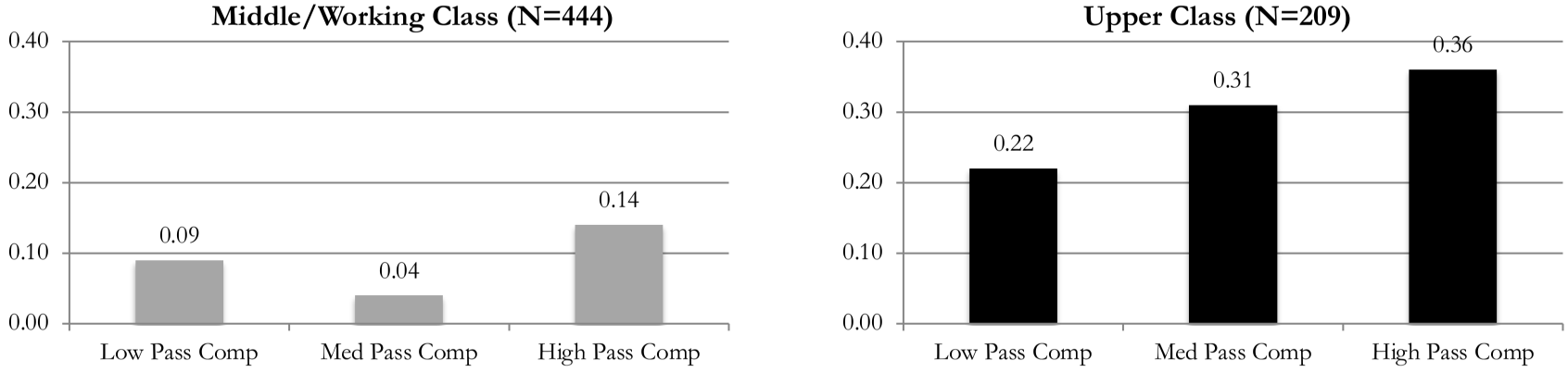
Do cognitive skills shape school-based preferences, net of socioeconomic status? Congruent with Hypothesis #2, our descriptive data suggest they might. Advantaged parents within the top and middle skill terciles are about 1.5 times more likely to cite schools as a mobility driver as similarly advantaged bottom tercile parents – a pattern not replicated among middle/working parents. These

descriptive results reinforce the class heterogeneity in skill-based tract K-12 test score sorting revealed by our discrete choice models and implicate class- and skill-based disparities in preferences for schools as a potential driver. Yet skill-based constraints are not ruled out. Panel B reveals that, conditional on expressing a school-based preference, a large class-based difference in median tract tract K-12 scores remains (~130 points). Future research is needed to examine whether parental skills mediate this residual class gap.

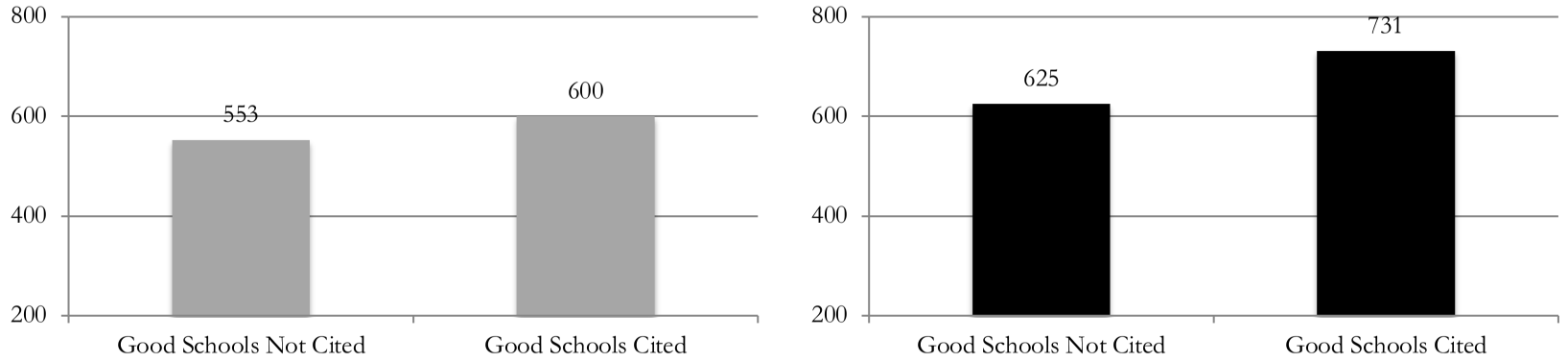
FIGURE 1.3

Neighborhood Mobility Preferences by Class and Skill Levels

A. Proportion of wave 1 LA FANS primary caregivers who moved within prior five years and reported access to good schools as a driver of neighborhood mobility decision during wave 1 survey, by class and skill level.



B. Median tract K-12 test scores of chosen tract at survey baseline by whether good schools cited as a driver of neighborhood mobility.



Notes

[a] All estimates are weighted based on L.A.FANS wave 1 sampling procedures.

[b] Panel B estimates of subgroups' median tract K-12 test scores are calculated based on an average of respondents' baseline census tracts' estimated K-12 test scores over the three years during which wave 1 was fielded (2000 through 2002).

Our analyses thus far do not solidify whether skills themselves stratify school-centric residential preferences and sorting, or if skill and class correlates, such as parents' educational expectations and investment in their children, confound observed skill effects. Leveraging L.A.FANS data on how many years of education parents expect their children to receive (to proxy expectations) and on the number of extracurricular activities in which their children are involved (to proxy investment), we confirm each construct is positively correlated with parents' cognitive skill levels (~0.3) (Table 1.5A). [12]

We then interact these variables with tract status and tract K-12 test scores and add them into our most complete discrete choice models from Tables 3 and 4. The partial model output in Table 1.5B reveals that while extracurricular investment interactions are strongly significant in each model ($p < 0.01$), the cognitive skill interactions with neighborhood status and K-12 test scores remain significant. Parents' educational expectations and especially extracurricular investments may thus account partially – but likely not fully – for class- and skill-based stratification in neighborhood preferences and, in turn, contextual sorting.

[12] For more details on how we constructed these measures, see Appendix B.

TABLE 1.5

Potential Mechanisms Underlying Residential Sorting Effects of Respondent Skills, Structural Tract Characteristics, & Tract K-12 Scores

A. Correlation matrix of person, person-year, and tract attributes, *N* = 3,317

	Passage Comprehension	Educational Expectations	Extracurricular Investment
Passage comprehension	*	0.2724	0.2868
Educational expectations	0.2724	*	0.3984
Extracurricular investment	0.2868	0.3984	*
Household income (log) (time-varying)	0.3944	0.2666	0.4411
Bachelor's degree (time-varying)	0.3834	0.2448	0.2308
White	0.3603	0.0399	0.2506
Latino	-0.2703	-0.1242	-0.4562
African-American/Black	-0.0026	-0.0563	0.0281
Asian/Pacific Islander	-0.1371	0.1633	0.2162
Tract status index (time-varying)	0.4723	0.3616	0.5431
Tract K-12 test scores (time-varying)	0.3777	0.3134	0.5146

B. Partial output from conditional logit models

	Table 1.4, Model 1 Upper Class Sample		Table 1.4, Model 1 with Mediators		Table 1.3, Model 4 Full Sample		Table 1.3, Model 4 with Mediators	
Variables	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.
Med. passage comp. X Tract status index	0.457*	0.147	0.449*	0.152	1.208	0.220	1.093	0.197
High passage comp. X Tract status index	0.441	0.190	0.412	0.187	1.702*	0.357	1.523*	0.297
Med. passage comp. X Tract K-12 scores	4.962**	2.202	4.877**	2.264				
High passage comp. X Tract K-12 scores	5.599**	2.316	5.944**	3.918				
Educ. expectations X Tract status index							1.008	0.033
Extracurric. invest. X Tract status index							1.305**	0.085
Educ. expectations X Tract K-12 scores			0.941	0.153				
Extracurric. invest. X Tract K-12 scores			1.500**	0.312				
Observations								
Number of persons	165		165		284		284	
Number of person-years	1,476		1,476		3,317		3,317	
Number of person-year-tract alternatives	74,522		74,522		167,342		167,342	

Notes

[a] For more details on educational expectations and extracurricular investment variable operationalizations, descriptive statistics, and imputation procedures for missing values, see Appendix B. Full output for all Panel B models is available upon request.

[b] Models include: standardized measures of all census-derived tract-level variables, tract K-12 test scores, the educational expectations and extracurricular investment variables, and the continuous household income variable; analytic weights based on L.A.FANS/MIP sampling procedures/attrition; and the offset term, $-\ln(q_{ijt})$,.

DISCUSSION & CONCLUSION

The burgeoning literature exploring the intergenerational process of skill development highlights the role of parenting tactics but not contextual selection. The rich urban stratification literature, for its part, takes contextual selection as its object of analysis, yet its structural orientation obscures cognitive skills' role. We believe cognitive processes contribute to urban stratification and the intergenerational transmission of context. Neighborhoods shaped parents' skill development as children, and these skill levels predict their own children's neighborhood conditions. Evolving housing market dynamics and school choice systems may amplify skill-based sorting processes, and these processes plausibly shape the residential and educational opportunities available to less advantaged and less skilled city residents.

To assess our theoretical framework, we integrate Angelenos' socio-demographic characteristics, cognitive skills, and residential histories, with census, GIS, and administrative data on L.A. County neighborhoods' spatial locations, housing markets, socio-demographics, and K-12 test scores. Neighborhood attainment-oriented discrete choice models show that cognitive skills interact with evolving opportunity structures to independently shape neighborhood status sorting, even after confirming the key roles played by race and class, housing markets, and spatial proximity. Among advantaged parents, cognitive skills are associated with sorting on public school test scores, specifically, rather than neighborhood status generally, net of interactions between skills and neighborhood status and a wide range of controls. Skill-stratified preferences for neighborhood school quality, or perceived signals of quality, may drive this pattern.

Our results suggest neighborhood sorting occurs not only the basis of race and class but also on the basis of cognitive skills, a mechanism we call *skill-based contextual sorting*. This model has important implications for the urban stratification and intergenerational transmission of skills literatures. As Krysan and Crowder (2017) argue, urban stratification's structural focus on economic

resources, racial residential preferences, and housing discrimination may obscure key processes underlying neighborhood sorting. Race and class continue to profoundly shape housing markets, but their firm grip may be slowly weakening, and the roles played by information and networks are undoubtedly expanding. Results of a recent policy experiment reinforce this intuition. In Seattle and King County, modest investments in reducing informational barriers among housing voucher recipients (via customized housing search assistance, paired with short-term financial support and landlord engagement) dramatically increased the likelihood they selected neighborhoods with high upward mobility rates (Bergman et al. 2019). As neighborhood-level data on measures ranging from upward mobility to K-12 school quality proliferate, the perceived neighborhood status hierarchy may no longer be determined solely based on race and class composition. These dynamics plausibly open the door to skill-based stratification, especially among advantaged parents who can readily access or prefer this kind of information and who can overcome the financial constraints required to act on it. Amidst the increasing residential separation of the affluent (Owens 2016; Reardon and Bischoff 2011), understanding precisely how elites preserve spatial advantages may illuminate key mechanisms by which disadvantaged families' residential options are constrained.

These processes have further implications for the intergenerational transmission of skills literature, which should supplement its focus on parenting tactics with a deeper analysis of how skills shape, and are shaped by, environmental conditions to which children are exposed. The neighborhood appears to be an important domain for skills development, but contextual sorting vis-à-vis other domains (e.g., childcare, schools) are also likely salient. Skills scholars should examine what environmental domains, and what features of them, interact with parental skills to produce sorting.

We acknowledge the limitations of our study. L.A.FANS encompasses a relatively small group of parents within one urban ecology during one temporal era. Future studies should leverage

larger samples with more diverse household structures and lifecycle phases, spanning longer time periods and broader geographies. Data on non-traditional public schools could also prove useful. Further theorizing is required to determine what additional skills (e.g., quantitative, noncognitive, or socioemotional capacities) and neighborhood features (e.g., environmental toxicity, crime levels) should be incorporated into ever-richer neighborhood sorting models. Examining whether these finer-grained sorting processes help explain race- and class-based gaps in neighborhood quality, and whether race and class moderate these processes would meaningfully enrich urban stratification models. Such analyses also promise to improve non-experimental estimates of neighborhood effects on individuals' outcomes (van Ham et al. 2018).

Our study could not definitively resolve whether sorting patterns reflect skill-based differences in preferences or constraints vis-à-vis neighborhood characteristics and whether skill-based sorting on neighborhoods' school test scores among advantaged parents reflects differential prioritization of school quality or merely differential perceptions of school test scores as a proxy for it. The challenges of disentangling preferences from constraints and clarifying their sources are endemic to all decision-making research. Stratifying respondents not only on socio-demographics, but also on skills and combining stated preferences (neighborhood vignettes) with revealed preferences (residential mobility histories) may help. Additional research that closely documents how cognitive skills versus other correlated factors like educational expectations shape the contemporary housing search is also necessary.

Our results are nonetheless robust in identifying skill-based contextual sorting as an emerging axis along which urban inequality is unfolding. This development is important to explore, especially in an era of liberalized, choice-oriented urban policy marked by school choice regimes and housing voucher programs. Reducing constraints to individuals' residential and school-enrollment

decisions in such an era, while intended to equalize socioeconomic opportunities across race and class lines, could well amplify skill-based stratification instead.

2

Parental Depression and Contextual Selection: The Case of School Choice

Parents' socioemotional health shapes children's cognitive and socioemotional development and, in turn, their life chances. A large literature links maternal depression, in particular, to children's cognitive and socioemotional skills and implicates daily parenting tactics as a key mechanism (Cummings and Davies 1994; Downey and Coyne 1990; Goodman and Gotlib 2002; McLeod, Weisz, and Wood 2007). In this view, depression's often debilitating symptoms lead to elevated psychosocial aggression, limited emotional engagement (Bodovski and Youn 2010; Kuckertz, Mitchell, and Wiggins 2018) and reduced participation in "concerted cultivation" practices, such as time spent reading to and playing with children (Baker and Iruka 2013; Kiernan and Huerta 2008). Yet recent studies suggest these mechanisms explain only a modest portion of the parental depression-child development association (Kuckertz et al. 2018; McLeod et al. 2007).

I argue that a missing mediating pathway merits attention: contextual selection. Contemporary parenting entails not only engaging directly with children in daily interactions ranging from play time to discipline but also navigating increasingly complex residential and educational markets and selecting environmental contexts in which to raise children. If parental depression inhibits children's access to high-quality neighborhood, school, and childcare settings and if these contexts in turn stratify children's development, then contextual selection may constitute an overlooked path by which parental depression affects children's prospects.

The depression-contextual selection link is likely strongest in large American cities, which are flush with neighborhood and school options and saturated with publicly-accessible information on

their quality. In these places, depression plausibly constrains information collection and impairs child-optimizing decision-making, while reducing parents' ability to overcome the institutional hurdles imposed by highly coveted residential and educational contexts. Thus, depressed parents may be less likely to sort their children into neighborhoods, schools, and childcare settings most conducive to their children's long-term success. These dynamics may be especially pronounced among disadvantaged minority parents, who disproportionately live in choice-rich (i.e., dense and urban) contexts, yet often lack the financial, informational, and social resources – as well as effective therapeutics and healthcare (Cabassa, Zayas, and Hansen 2006; González et al. 2008) – that could buffer depression's negative effects.

Contemporary K-12 school sorting in large metropolitan areas offers a theoretically strategic case to assess these expectations. Until the 1990s, the vast majority of American children attended their locally-assigned public school. However, the school reform movement has upended the structure of school assignment in many cities since. Predicated on market principles, such as choice, information, and competition, reforms softened longstanding school enrollment residency requirements and fueled the expansion of non-traditional public school options, including charter and magnet schools, as well as school quality data (Archbald 2004; Berends, Waddington, and Schoenig 2019; Orfield and Frankenberg 2013). Recent estimates suggest 30-40% of children now opt out of their residentially-assigned public school (Candipan 2020). Yet the literature on school sorting has paid minimal attention to socioemotional health's role in shaping this complex and high-stakes decision-making process. In an era of choice, information, and intensive parenting norms, are depressed parents – especially those who are also disadvantaged minorities – less likely to leverage alternative school options to their children's benefit?

To examine this core question, I leverage Los Angeles Family and Neighborhood Survey (L.A.FANS) data, which include a well-validated parental depression measure, as well as the

residential and educational conditions of over 2,000 children ages 5 – 17 in Los Angeles County during the 2000s. During this time, alternative school options and school quality data were expanding, just as high-stakes parenting norms were strengthening. These factors conceivably placed additional strain on parents who were navigating an already vast, fragmented, and complex urban ecology. Logistic regression models examining whether depressed parents are less likely to enroll their children in a non-assigned school suggest that depression may indeed play an important but often underappreciated role in educational selection and stratification. All else equal, I find that children of depressed parents are less likely to attend a school of choice, whether a magnet, charter, or private school. These estimated depression-based disparities are considerably larger among non-whites and some evidence suggests they are largest among blacks. Moreover, the findings are robust to multiple operationalizations of school sorting, consideration of several potential confounding explanations, and the inclusion of neighborhood fixed effects. That is, *even among residents of the same neighborhood*, non-white children whose parents are more likely to be depressed are less likely to sort their children into alternative school options.

These dynamics may contribute to black children of depressed parents attending lower-quality schools. I estimate that this subgroup attends public schools that score over a decile lower on state value-added rankings than similarly situated children of non-depressed parents. Moreover, several studies suggest private, magnet, and/or charter schools exert causal boosts to children's cognitive development and long-term trajectories (Berends 2015; Figlio and Stone 2012; Wang, Herman, and Dockterman 2018), especially for disadvantaged students residing in core-city neighborhoods (CREDO 2015; Goldhaber and Eide 2002). Thus, depression-based school sorting disparities likely have material consequences for inequality. I conclude that parental depression may shape children's trajectories not only via day-to-day parenting tactics but also via contextual selection. Contemporary systems of choice may exacerbate rather than mitigate school and

neighborhood segregation, while further inhibiting the life chances of depressed and disadvantaged parents' children, who are particularly vulnerable.

PARENTING WITH DEPRESSION

Depression is a pernicious and pervasive mental health condition involving debilitating and often-chronic symptoms like depressed mood and diminished interest in typically enjoyable activities. These symptoms can impede individuals' success across professional, educational, social, and familial domains. About 10% of Americans endure a major depressive disorder within a given year and twice as many experience one at some point in their lives (Hasin et al. 2018; Kanter et al. 2008; Kennedy 2008; Kessler et al. 2012; Kessler, de Jonge, and Shahly 2015; Kupfer, Frank, and Phillips 2012). Stratification and health scholars espousing a life-course perspective have long highlighted depression's distal causes and consequences. Emphasizing the family's crucial role in transmitting cognitive, socioemotional, and structural conditions across generations (Elder 1998), these researchers framed maternal depression not only as a critical threat to mothers' wellbeing but also that of their children (Turney 2011c, 2011a). A robust literature employing an intergenerational lens estimates and explains the correlation between maternal depression and children's cognitive and socioemotional development.

These studies link maternal depression to increased internalizing and externalizing behavioral problems among both very young and school-aged children, as well as future anxiety and depression as children age into adulthood (for reviews, see Cummings and Davies 1994; Downey and Coyne 1990; Goodman and Gotlib 2002; McLeod et al. 2007). Maternal depression may also constrain cognitive development, though here the empirical consensus is slightly weaker. Some studies suggest that maternal depression predicts lower language and vocabulary competencies, as well as other

cognitive performance measures, across a wide range of ages (Bodovski and Youn 2010; Brennan et al. 2000; Claessens, Engel, and Curran 2015; Hay et al. 2001; Kiernan and Huerta 2008; Paulson, Keefe, and Leiferman 2009; Petterson and Albers 2001; Yu and Wilcox-Gök 2015).

These observed parental depression-child development links have motivated a spate of studies on salient mediators, with day-to-day parenting tactics looming large. Maternal depression appears to foster stressful living conditions and destabilized family routines and to increase the likelihood of parental neglect (e.g., leaving a child home alone), psychosocial aggression, and physical discipline. Emotionally, depressed mothers disproportionately behave in a hostile, negative, withdrawn, or disengaged manner. A large literature documents how these behaviors, in turn, compromise children's socioemotional development (Bodovski and Youn 2010; Choi et al. 2019; Cummings and Davies 1994; Downey and Coyne 1990; Feng et al. 2007; Hildyard and Wolfe 2002; Kuckertz et al. 2018; Lovejoy et al. 2000; Natsuaki et al. 2014; Norman et al. 2012; Schwartz et al. 2014; Taraban et al. 2019; Turney 2011b, 2012). Another stream of mediation-oriented research suggests that depressed parents are less likely to engage in "concerted cultivation" enrichment activities, like reading, that encourage learning and exploration (Baker and Iruka 2013; Kiernan and Huerta 2008; Paulson et al. 2009) and bolster cognitive skills. Yet recent studies suggest that the hypothesized mechanisms are insufficient to explain the parental depression-child development link; other pathways are likely implicated (Kuckertz et al. 2018; McLeod et al. 2007; Rice 2009).

A Missing Mediator? Parental Depression and Contextual Selection

Although alternative mediators, including disadvantaged economic conditions (Heflin and Iceland 2009; Williams and Cheadle 2016) and unstable family dynamics (Bauer et al. 2013; Kim and McKenry 2002) have been posited, one mediating pathway remains almost entirely absent from consideration: contextual selection. I argue that maternal depression may inhibit children's access to

high-quality neighborhood, school, and childcare settings, which are crucial domains for their development. Inattention to this possibility may partially reflect life-course theory's emphasis on very young children (5 and under), given their particularly malleable cognitive development (Duncan et al. 2007; Duncan and Magnuson 2011; Reardon and Galindo 2009), and the family domain, where young children spend the vast majority of their time. Neighborhood and school stratification scholars, for their part, have justifiably focused their analyses on the central roles played by race and class (Krysan and Crowder 2017), with parental cognitive and socioemotional factors typically considered secondary (Schachner and Sampson 2020).

However, recent evidence suggests these orientations may be worth revisiting. First, children's cognitive and especially socioemotional skills remain malleable in the K-12 years, when families' dominant role is partially supplanted by neighborhoods and schools (Chetty, Hendren, and Katz 2016; Jennings et al. 2015; Lloyd and Schachner 2020). Second, race and class remain central drivers of children's environmental contexts, but the ascendance of choice-based policies (e.g., housing vouchers, charter school expansion) and dissemination of information on school and neighborhood quality plausibly stratifies intra-group disparities in parents' ability to access, interpret, and act on often-complex data sources (Schachner and Sampson 2020). If maternal depression compromises these crucial capacities, then a novel mediating pathway linking the condition and children's prospects emerges.

PARENTAL DEPRESSION AND SCHOOL SELECTION

Contemporary K-12 school sorting is a theoretically strategic case in which to examine a potential maternal depression-contextual selection link. Historically, the vast majority of American children attended the local public school to which they were assigned based on their residential address' catchment zone (Lareau and Goyette 2014). This enrollment system, ubiquitous until the 1990s,

largely obviated the need for studies on fine-grained dynamics of school selection. If maternal depression shaped children's educational conditions at all, the effect would likely operate through *residential* selection.

However, today about 40% of children attend a K-12 school other than that to which they were geographically assigned (Candipan 2020). This shift primarily reflects two trends fueled by the school reform movement, which embraced market-based principles as a hoped-for antidote to educational inequities. First, non-traditional public school options, such as charter and magnet schools, precipitously expanded alongside the longstanding private school option, while school enrollment rules liberalized and interdistrict transfer programs spread. Second, the amount of publicly-accessible information on school quality vastly increased (Archbald 2004; Berends 2015; Berends et al. 2019; Hoxby 2003; Orfield and Frankenberg 2013). Meanwhile, high-stakes parenting norms strengthened, creating additional pressure to optimize for children's development (Kornrich and Furstenberg 2013; Lareau 2011). A large body of work has examined the unintended consequences of these shifts for race and class segregation (e.g., Owens 2016; Saporito 2009). Yet no known study has considered how depressed parents, who already endure elevated stress levels, navigate the school ecosystem in an era of rampant choice, complex data, and high-stakes parenting – conditions that one sociologist characterizes as fostering "Kinder Panic" (Brown 2020).

Why Depression Might Matter

When neighborhood and school sorting processes were inextricably linked, *structural constraints* (e.g., race, income, and wealth) largely determined which families gained access to which schools via the housing market, regardless of *parental preferences*. Reduce structural constraints and, school choice advocates' thinking goes, more equitable school sorting outcomes will follow. But this assumption is likely flawed, and parental depression illustrates why. The condition plausibly dampens parents'

preferences for non-local school options and weakens their ability to overcome constraints to access them. If true, choice-based systems may exacerbate inequality on the basis of parental depression.

With regard to preferences, it is well-established that depression predicts a diminished external locus of control and sense of self-efficacy (Benassi, Sweeney, and Dufour 1988). If depressed parents feel hopeless and ineffectual in navigating increasingly complex systems of school choice, then they may be less likely to seek desirable non-assigned school options. Reduced levels of participation in educational enrichment activities among depressed parents (Baker and Iruka 2013; Kiernan and Huerta 2008; Paulson et al. 2009) may also play a role. Although an explicit link between "concerted cultivation" practices and school quality preferences has not been examined, depressed and disengaged parents may be less attuned to their children's particular educational needs and less inclined to reconfigure their already-burdened lives in ways that optimize for it. Depressed parents may also be disconnected from the robust social networks of parents who are actively engaged in concerted cultivation practices and plausibly amplify each other's preferences for maximizing school quality via non-traditional school options (Bader, Lareau, and Evans 2019).

As for constraints, the contemporary school choice system in large American cities requires overcoming a number of hurdles constraining access to non-assigned schools, including: (1) assessing a vast ecosystem of school options and absorbing vast quantities of information (e.g., test scores, school climate, teacher quality) to gauge quality, (2) deciding on a prioritized set of schools, and (3) navigating often-complex enrollment processes to gain access to a non-assigned option. This type of information collection and processing is a difficult task in general, but it may disproportionately burden depressed parents. A key resource capable of helping parents access school-related information is social networks (Bader et al. 2019; Fong 2019; Schneider et al. 1997). Yet depressed parents may be less likely to have strong social and familial networks from which to extract this support (Visentini et al. 2018).

It is not only the collection of information but also processing and affirmatively acting on it that could also prove difficult for them. A core depression symptom is difficulty with decision-making. Indecisiveness is now a criterion used in depression diagnosis (American Psychological Association 2013), and recent studies suggest depressed individuals exhibit a disproportionate propensity to avoid risk (Cobb-Clark, Dahmann, and Kettlewell 2019; Eshel and Roiser 2010; Huys, Daw, and Dayan 2015; Leykin, Roberts, and DeRubeis 2011). Sending a child to the residentially-assigned public school requires no active decision and the option is likely perceived as the least risky.

Moreover, parents must manage a complex set of processes consisting of paperwork, lotteries, and strict deadlines to turn alternative school choices into reality (Brown 2020; Corcoran et al. 2020; Fong and Faude 2018). Attention and executive function deficits associated with depression may compromise parents' abilities to navigate this bureaucratic terrain. Informal interpersonal dynamics may also disadvantage depressed parents. Some parents may attempt to overcome missing deadlines or gain a leg up in accessing certain schools by ingratiating themselves to institutional gatekeepers (e.g., district personnel, principals, teachers). However, depressed parents may struggle managing these high-pressure interpersonal interactions (Hames, Hagan, and Joiner 2013).

Structural Disadvantage as a Moderator

These depression-inflected dynamics may be amplified among parents of disadvantaged minority (i.e., non-white) children. Collecting and acting on information in a vast and complex educational ecosystem is difficult enough for any parent (Corcoran et al. 2020), let alone a depressed one. But it may be particularly difficult among non-whites, given their sharply reduced rates of antidepressant and mental health service usage; these ethnoracial disparities remain even when controlling for socioeconomic resources (Cabassa et al. 2006; González et al. 2008). Non-whites also

disproportionately lack access to digital and non-digital tools that provide accessible and digestible information on the range of school options available and measures of their quality. Indeed, blacks and Latinos are roughly half as likely to enjoy internet access at home as are whites, and only about a quarter of the gaps are accounted for by income differences (Fairlie 2014).

Although disadvantaged minority parents could theoretically compensate for these informational gaps by tapping into social and family networks, research suggests minority and especially black households have access to smaller networks than do white households (Ajrouch, Antonucci, and Janevic 2001) and perhaps exhibit less trust in the network ties they do have (Smith 2010). Depression may further erode the size of, and trust in, racial minorities' already-compromised social networks. Conversely, even if white parents exhibit depressive symptoms, the network benefits associated with residing in a racially and socioeconomically advantaged neighborhood – where school decisions are frequently discussed (Bader et al. 2019) – may still accrue to them.

Recent research also suggests disadvantaged minority parents, specifically black and Latino parents, are disproportionately likely to struggle with bureaucratic hurdles, such as strict deadlines associated with school choice systems perhaps due to instability in their residential locations (Fong and Faude 2018). Depression may exacerbate this problem, given the condition's association with household instability and impaired time management. Overcoming missed deadlines, paperwork errors, or lottery rejections to secure enrollment in non-assigned schools often requires successfully navigating complex institutional bureaucracies – a process upper-middle class, white parents are especially well-versed in; disadvantaged minority parents are often more likely to defer to institutional gatekeepers (Lareau 2011), and less likely to be well-received when they do attempt to intervene (Kim 2009). Two concrete hypotheses follow:

(1) *Depressed parents are less likely than non-depressed parents to send their children to school of choice (i.e., magnet, charter, or private school).*
(2) *These school enrollment effects are strongest among disadvantaged minority families, especially blacks and Latinos.*

RESEARCH DESIGN AND METHODS

To examine these core hypotheses, I employ data from L.A.FANS, a panel study that explores the multilevel sources of inequality and wellbeing within Los Angeles County during the 2000s. L.A.FANS wave 1 data collection was conducted in 2000-2002, with a probability sample of 65 Los Angeles County neighborhoods (census tracts). Within each tract, L.A.FANS selected a sample of blocks, and within selected blocks, a sample of households was selected. 3,085 households ultimately completed household rosters. Within each of these households, researchers attempted to interview one randomly selected adult (RSA) and, if present, one randomly selected child (RSC) under age 18. They also interviewed the primary caregiver (PCG) of the child (who could, or could not be, the RSA but was almost always the child's mother), and a randomly selected sibling of the RSC (SIB). Ultimately, 2,306 RSCs, 1,378 SIBs, and 1,957 PCGs overseeing these children were included in wave 1 data collection. Follow-up interviews were conducted with wave 1 respondents between 2006 and 2008 if they still resided within L.A. County (eligible sample response rate: 63%). A supplementary replenishment sample of respondents who did not participate in wave 1 were added to wave 2 data collection to ensure a sample size that was large and representative enough to generate statistically valid cross-sectional estimates for L.A. County resident measures at wave 2. For more details on the L.A.FANS design, see Sastry et al. (2006).

Because this study centers on K-12 school sorting processes, I specify my sample to include child-wave combinations in which the RSC or SIB were ages 5 to 17, enrolled in neither college nor special education, and for whom a complete L.A.FANS child survey was available. This specification yields an initial eligible sample of 3,180 child-wave combinations consisting of 2,539 unique child respondents nested within 1,910 unique primary caregivers/households**.** 2,906 (91%) of these eligible child-wave combinations contain valid school enrollment information and census tract geocodes. Given the centrality of parental depression to the study's aims, I then exclude child-wave

combinations in which the child's primary caregivers was missing a wave-specific depression probability estimate (N=20) or any other core model independent variable (N=134). Thus, the final sample consists of 2,752 child-wave combinations, 2,245 unique child respondents, and 1,682 unique primary caregivers/households.

I link the L.A.FANS-provided school identification codes for this analytic sample to California Department of Education data on school types (i.e., private, charter, magnet, traditional public) and average test scores. I also leverage ArcGIS to estimate spatial distances between children's reported tract of residence and school of enrollment, yielding valid estimates for 90% (N=2,468) of the final analytic sample. The procedures used to link these various datasets and construct key variables are described below.

School Sorting as an Outcome

My primary outcome is a binary measure indicating whether an L.A.FANS child respondent was enrolled in a *school of choice* using L.A.FANS-provided data linked to state administrative data reveal whether each child attended a magnet, charter, or private school – or a traditional public school. The school type designation is straightforward for students attending private or charter schools at the time of data collection, given that they never share California Department of Education school identifier codes with traditional public schools. Thus, for children whose L.A.FANS-provided school identifier codes are reported by the California Department of Education to be associated with a private or charter school, I mark the child-year as "1", indicating that the child attended a school of choice at the time of data collection.

The remaining children in my analytic sample attended either a magnet school or a traditional public school. My data sources do not easily identify which students are magnet versus traditional public school attendees because many magnet schools share a campus with a traditional

public school and therefore do not receive a unique school identification code from the state. However, the state's school directory does indicate whether a given school campus contains a co-resident magnet school. Thus, for all children attending a public school *without* a co-resident magnet, I can safely assume they are traditional public school attendees and therefore mark them as "0", indicating they did not attend a school of choice. The final subset of children attend a public school containing a co-resident magnet program which they may or may not attend. If the primary caregiver of a child within this group indicated her child attended a magnet program during the wave in question, I mark the child as "1", indicating she is a magnet student and therefore enrolled in a school of choice. All remaining children are marked as "0" because I have no evidence they attended a private, charter, or magnet school, even if a co-resident magnet school is located on their school's campus.

However, to assuage concerns regarding these analytic decisions regarding magnet school designation and the potential measurement error they introduce, all core models are replicated using a more stringent but easier-to-measure binary outcome: (a) attendance in a private or charter school and then (b) attendance in a private school (versus a public school of any kind). Results remain substantively unchanged. I also leverage ArcGIS to predict the *network distance* (road length, in miles) *logged* capturing the distance between the centroid of a child's census tract of residence and the centroid of the census tract in which their L.A.FANS-reported school of enrollment is located. If the child attends a school within her home census tract, the measure takes a value of 0. The models based on this measure make no assumptions regarding school type, while providing a theoretically valuable and immediately intuitive gauge of whether depression might constrict parents' physical activity space and plausible school choice sets.

Parental Depression as Predictor

My primary predictor of non-neighborhood school attendance is the *probability of depression*, ranging from 0 to 1, exhibited by the child's L.A.FANS-designated primary caregiver – which is almost always the child's mother – during the child-year in question. This metric is based on respondents' answers to the Composite International Diagnostic Interview-Short Form (Kessler et al. 1998), which was developed by the World Health Organization, based on the Diagnostic and Statistical Manual of Mental Disorders, and used in the U.S. National Health Interview Survey. Note that this depression probability is wave-specific. In other words, a primary caregiver could be deemed a high probability case of depression at wave 1 (when an analytic sample child is enrolled in elementary school) and a low probability at wave 2 (when the same child is in high school or her sibling is 5-17). I employ the depression probability that is temporally aligned with that of the school enrollment outcome in the analytic sample. I convert this linear measure into a binary one to facilitate interpretation and mitigate the highly skewed nature of the distribution. A primary caregiver with a probability of depression over 0.5 is marked 1, indicating a high likelihood of depression; any lower probability is marked 0. Robustness checks preserve the continuous construction and generate very similar results (results available upon request). Although supplementing the primary caregiver's probability of depression with an analogous measure for her (typically male) spouse/partner would be ideal, L.A.FANS did not consistently track this measure for non-primary caregivers. Moreover, research suggests that across social classes, it is mothers, not fathers, who overwhelmingly bear the burden of school-related research and enrollment decisions (e.g., Reay and Ball 1998).

Control Variables

I incorporate a range of child-, parent-, household- and neighborhood-level factors that could confound the observed association between depression and school sorting outcomes. First, I create

a set of age-based fixed effects reflecting whether a child is of elementary school age (5-10), middle/junior high age (11-13), or high school age (14-17) at the time of data collection, given the likelihood that rates and drivers of neighborhood-school decoupling vary by school level. I also use categorical variables to control for child *sex* (reference: male), *race/ethnicity* (reference: white, black, Latino/Hispanic, Asian/Pacific Islander, Other/Multiracial), whether or not the primary caregiver is a *first-generation immigrant*, and the child's *household income (logged)*. The latter is wave-specific, encompassing all income sources reported by the head of household at wave 1 or 2. This estimate is standardized to year 1999 dollars and then logged. For most missing income values, L.A.FANS provides estimated imputed values (Peterson et al. 2012).

I include two additional time-varying socio-demographic variables that are often absent from school sorting analyses, especially those drawn from administrative data sources: a binary measure of whether the child resides in a home that is *owned* (reference: rented), a common proxy for wealth, which may be especially important when sending a child to private school, and a set of categorical variables to gauge the primary caregiver's *educational attainment*. The latter variables indicate whether the primary caregiver reported having not completed any college (reference), some college, or a bachelor's degree at the time of data collection. I also include household structure proxies, including whether the primary caregiver is *married* (reference: single and/or cohabiting) and a continuous measure of the *number of children* in the household, given that household transportation resources are critical to activating school choice, but they are likely strained among single-parent households with many children.

Beyond these traditional controls, I incorporate geospatial measures that account for the plausible choice set of local public school options available to parents within a given residential area. In my initial models, I use a time-varying tract-level *K-12 Test Scores* measure based on the most widely publicized and parsimonious test score measure — average levels of achievement— to assess

whether depressed parents are more or less likely to engage in neighborhood-school decoupling merely because they disproportionately reside in close proximity to lower (or higher) scoring public schools (for details on this measure and its construction, see Schachner and Sampson (2020)).

I then incorporate fixed effects capturing the child's *census tract of residence.* Inclusion of these fixed effects provide an especially rigorous test of the depression-school sorting link for three key reasons. First, the quality of children's local catchment-based public school option likely varies considerably between tracts even within the same district but minimally within tracts, given that residents of the same tract typically live within the same catchment school's boundaries. Second, since spatial proximity and transportation access appears so crucial in shaping school sorting (Corcoran 2018), the tract fixed effect essentially controls for spatial differences in parents' proximity to, and quality of, plausible school options. Third, between-neighborhood selection is likely to be an even more highly selected process than is between-region and between-district sorting. If neighborhood sorting is nontrivially shaped by unobserved factors, as neighborhood effects skeptics have long noted (Jencks and Mayer 1990), then the tract fixed effect may partially net out these factors' confounding effects on the depression-school selection association.

ANALYTIC STRATEGY

My core analyses predict the binary outcome of whether a child attends a school of choice (i.e., magnet, charter, or private) using logistic regression models (Equation 1):

$$log\left(\frac{pj}{1-pj}\right) = \beta_0 + \beta_1 x_{1j} + \beta_2 x_{2j} + \delta_{12} x_{2j} x_{1j} \ldots$$

p_j is the probability of a given child-year *j* entailing the child attending a school of choice, whether a magnet, charter, or private school. This outcome's log odds are predicted as a function of the child-, parent-, household-, and tract-level variables (x_{kj}) described above. My core predictor is the binary

measure gauging whether a primary caregiver has a high likelihood of depression (> 0.5) in a given child-year *j* (x_{1j}). To assess Hypothesis #1, the key parameter is β_1, the coefficient gauging the estimated effect of parental depression on the log odds that a child attends a school of choice (versus a traditional public school) for the sample as a whole. A positive coefficient value would indicate that depression predicts a higher likelihood of school choice activation; a negative value would suggest the opposite. To examine whether racial minority status moderates the effects of parental depression (Hypothesis #2), I include a set of interaction terms, represented by $x_{2j}x_{1j}$, which multiplies the binary depression indicator with the categorical variables representing each ethnoracial group in my sample, except for white children (i.e., the reference group) and Asian children due to sample size limitations. The key parameter here is represented by δ_{12}, the coefficient indicating whether depression exerts stronger effects on school sorting among racial minority groups than among white children. The logistic regression model relies on maximum likelihood estimation to generate coefficient estimates. I cluster all standard errors by the child's census tract of residence.

Given common concerns about interaction terms' standard errors generated by logistic regression models (Mize 2019), I replicate all logistic regression models that contain interaction terms using OLS models (i.e., linear probability models) with identical controls and standard errors clustered by census tract. Finally, as a robustness check, I preserve the OLS model specification but replace the binary outcomes gauging school choice enrollment with a continuous measure of how far away parents sent their children to school based on ArcGIS network distance calculations (i.e. road length in miles, logged). The coefficient on the parental depression predictor signifies how much closer or further away a child of a depressed parent is sent to school compared to an otherwise similar child of a non-depressed parent.

RESULTS

13% of the child-years (N=360) in this analytic sample were marked by a child being raised by a parent with a high likelihood of depression. Probability thresholds employed to operationalize depression vary across studies' analytic samples, but my estimated depression propensity is very similar to recent estimates of point-in-time (versus chronic prevalence) maternal depression based on the Fragile Families Study (Turney 2011c) and the Early Childhood Longitudinal Study (Claessens et al. 2015; Yu and Wilcox-Gök 2015)

The families in this sample confronted a vast and varied choice set of school options. According to the California Department of Education, approximately 2,000 public and 1,300 private K-12 schools were operational in Los Angeles County during the timeframe in question: 2000 through 2008. Of these public schools, about 10% were designated as including a magnet program, while charters more than doubled in proportion, from 5% to 11% of public schools over the timeframe. County private schools declined slightly from 39% to 37% of all schools, but these high percentages belie much smaller student bodies compared to those of public schools.

Pivoting from ecological to micro-level data, Table 2.1 stratifies the analytic sample by depression probability to illuminate descriptive differences in school sorting patterns. Congruent with Hypothesis #1, children of parents who are highly likely to be depressed are over 40% less likely to attend any school of choice (10% compared to 17%). The top portion of the table reveals depression-based enrollment gaps for charter and private schools, but not magnet schools.

TABLE 2.1
Descriptive Statistics: L.A.FANS Pooled Child Sample

	Low PCG Depression		High PCG	
Variables	Mean	S.D.	Mean	S.D.
School attributes				
Traditional public school	0.83	0.38	0.90	0.30
Magnet	0.02	0.15	0.02	0.13
Charter	0.04	0.19	0.02	0.14
Private	0.11	0.32	0.07	0.25
Child attributes				
Elementary school (ages 5 – 10)	0.49	0.50	0.40	0.49
Middle/junior high school (ages 11 – 13)	0.23	0.42	0.29	0.46
High school (ages 14 – 17)	0.27	0.45	0.31	0.46
Female	0.50	0.50	0.49	0.50
White	0.19	0.39	0.28	0.45
Asian/Pacific Islander	0.09	0.28	0.02	0.15
Latino/Hispanic	0.54	0.50	0.49	0.50
Black	0.09	0.28	0.11	0.31
Other/Multiracial	0.10	0.31	0.10	0.30
Parent/household attributes				
PCG first-generation immigrant	0.51	0.50	0.42	0.49
Household income (log)	10.45	1.05	10.33	0.98
Homeowner	0.48	0.50	0.44	0.50
PCG did not attend college	0.54	0.50	0.57	0.50
PCG completed some college	0.29	0.45	0.33	0.47
PCG completed bachelor's degree+	0.17	0.38	0.10	0.30
PCG married	0.70	0.46	0.64	0.48
Number of children in household	2.54	1.19	2.32	1.10
Neighborhood attributes				
Average K-12 test scores	638.02	95.28	634.36	103.5
Observations				
N households	1,498		271	
N children	1,989		350	
N child-years	2,392		360	

Notes
[a] All means are weighted to adjust for L.A.FANS sampling design and attrition.
[b] 62% of child-wave observations are based on wave 1 of data collection; 38% are based on wave 2.

Do these depression-based disparities merely reflect potential confounders, such as race, class, and neighborhood conditions? The two subsamples do not dramatically diverge across independent variables, increasing the plausibility of a true depression effect on school enrollment. Although the lower likelihood of depression subsample is slightly more likely to be affluent, educated, and married, the depressed group is disproportionately likely to be white. These gradients are largely congruent with prior studies of maternal depression (Kessler and Zhao 1999; Lorant 2003; Meadows, McLanahan, and Brooks-Gunn 2008; Turney 2012). Also note that the average neighborhood-level measure of public school test scores is virtually identical, suggesting depression-based differences in residential contexts likely do not fully explain school enrollment disparities.

Depression and School Choice

To more rigorously examine whether the observed parental depression-school choice link is a compositional artifact, I construct logistic regression models with a simple binary outcome indicating whether or not the parent's child was enrolled in a traditional public school ("0") or an alternative school option ("1"). The first model (Table 2.2, Model 1) covers the full analytic sample, excludes all spatial variables and the core depression predictor, and thus serves as a baseline from which to build. It reveals, unsurprisingly, that the strongest positive predictors of a child's enrollment in an alternative school option is educational attainment and household income. On the other hand, children identified as Latino or Other/Multiracial appear less likely to attend a school choice option. Model 2 adds in only the core depression predictor and reveals that as predicted, depressed parents' children are significantly less likely to attend a non-assigned school option ($\beta = -0.55, p < 0.05$), all else equal.

TABLE 2.2

Effects of Child, Parent, Household, and Neighborhood Characteristics on School Sorting, Logit Models

Outcome: Type of School	Model 1: Magnet, Charter, or Private		Model 2: Magnet, Charter, or Private		Model 3: Magnet, Charter, or Private		Model 4: Private or Charter		Model 5: Private Only	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood			-0.551*	0.249	-0.728*	0.305	-0.845**	0.314	-0.942*	0.370
Child attributes										
Female	-0.216	0.143	-0.229	0.142	-0.191	0.185	-0.185	0.209	-0.343	0.247
Asian	-0.098	0.429	-0.161	0.422	-0.170	0.511	-0.140	0.531	0.438	0.622
Latino	-0.875*	0.357	-0.931*	0.359	-0.802	0.522	-0.849	0.560	-0.834	0.662
Black	-0.407	0.426	-0.430	0.423	-0.171	0.599	-0.063	0.647	0.329	0.686
Other/Multiracial	-0.832*	0.374	-0.874*	0.372	-0.843	0.531	-1.003	0.606	-1.028	0.699
Parent/household attributes										
PCG first generation immigrant	0.139	0.228	0.148	0.224	-0.130	0.276	-0.106	0.306	-0.590	0.367
Household income (log)	0.489**	0.155	0.488**	0.156	0.467*	0.183	0.600**	0.188	0.803**	0.223
Homeowner	0.307	0.276	0.312	0.276	0.824*	0.405	1.016*	0.407	0.820	0.437
PCG completed some college	0.750**	0.229	0.754**	0.234	0.773*	0.300	0.862*	0.336	0.845*	0.418
PCG Bachelor's degree+	1.435**	0.265	1.400**	0.268	1.095**	0.329	0.841*	0.370	0.752	0.407
PCG marital status: married	-0.226	0.242	-0.235	0.243	-0.306	0.270	-0.445	0.308	-0.237	0.315
Number of children in hhld.	0.065	0.090	0.059	0.090	0.015	0.101	0.117	0.118	-0.010	0.138
Neighborhood attributes										
Average K-12 Test Scores	-0.005**	0.001	-0.005**	0.002						
Constant	-4.374*	1.713	-4.176*	1.733	-8.190**	1.885	-9.789**	1.905	-11.025**	2.358
Census Tract Fixed Effects	N		N		Y		Y		Y	
Household *N*	1,682		1,682		1,387		1,340		1,207	
Child *N*	2,245		2,245		1,807		1,741		1,579	
Child-Year *N*	2,752		2,752		2,103		2,028		1,843	

Notes

[a] All models contain the following fixed effects: wave of data collection (2006-08) and school level (middle/junior high, high).

[b] Standard errors are clustered by census tract.

[c] $*p < .05$, $**p < .01$ (two-tailed test).

Although Model 2 provides preliminary support for Hypothesis #1, it does not sufficiently account for the potentially uneven spatial distribution of depressed parents across Los Angeles County. If depressed parents are disproportionately likely to reside within areas containing lower- or higher-scoring public school options, then perhaps the observed parental depression effect on *educational* sorting is merely an artifact of *residential* sorting. To address this concern, I first add in a measure gauging the average K-12 test scores of traditional public school options nearby, which exerts the predicted negative effect on the likelihood of enrollment in an alternative (β = -0.01, $p <$ 0.01) (Model 3).

The strongest test of my core hypothesis so far entails applying census tract (i.e., neighborhood) fixed effects, which simultaneously capture spatial differences in local public school quality (without assuming test scores are the key proxy of it) and in families' proximity to alternative options. They also capture difficult-to-measure sources of heterogeneity that lead families to reside within the same neighborhood. Model 4 suggests that, even among similarly situated children residing within the same neighborhood (β = -0.07, $p < 0.05$) (Model 3). Finally, I preserve the same model structure but switch to binary outcomes that are more specific and easily-measured using my data sources: enrollment in a private or charter school (Model 5) or just a private school (Model 6). Both models confirm that parental depression reduces the likelihood of enrollment in these highly-coveted alternative school options. Hypothesis #1 is supported.

Racial Differences in the Depression-School Choice Link

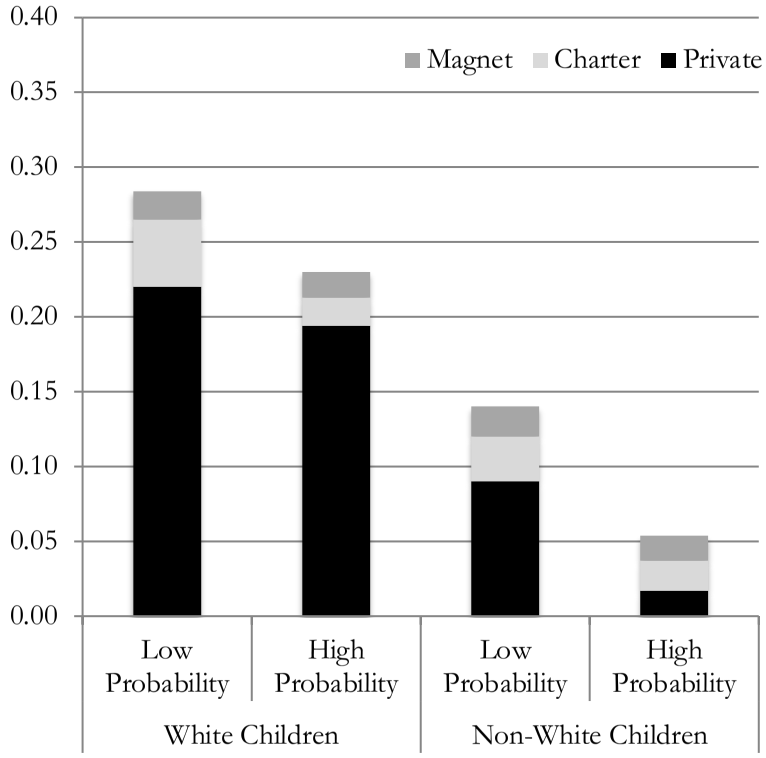
Next, I pivot to my second hypothesis: that parental depression's effect on school enrollment is stronger among non-white households who may lack sufficient informational, financial, social, and therapeutic resources to buffer depression's negative effects. A descriptive visualization that stratifies

neighborhood-school decoupling rates by depression probability and by white versus non-white children shows sizable between-race disparities in both the outcome overall and in depression's effects (Figure 2.1, Panel A). Without any statistical adjustments, depression is linked to a six percentage point (or approximately 20%) decrease in school choice likelihood (29% versus 23%) among white children. But among non-whites, the unconditional depression-based gap is eight percentage points – a drop of over 50 percent (6% versus 14%).

FIGURE 2.1

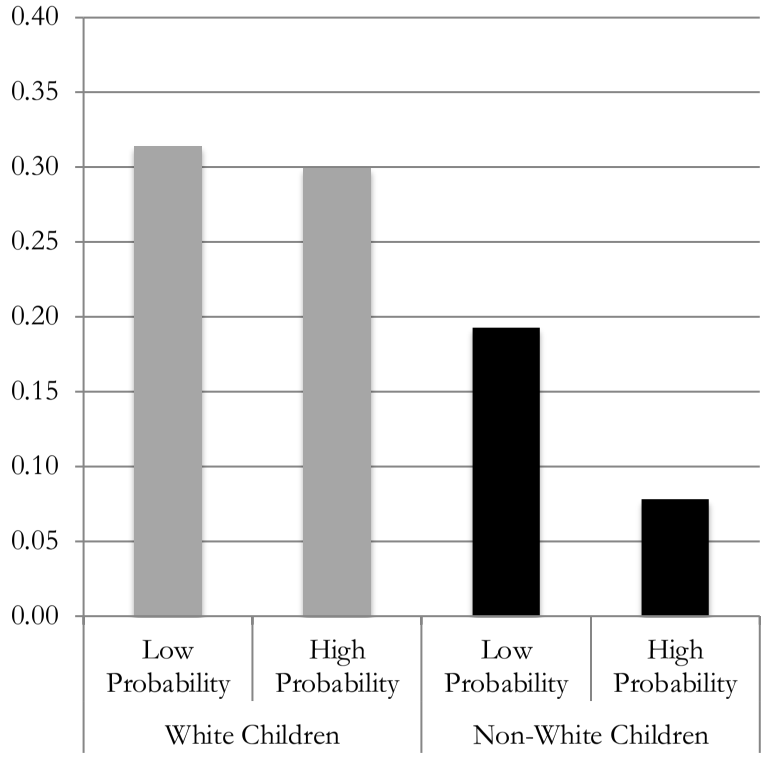
School Sorting Outcomes by Race/Ethnicity and Probability of PCG Depression

A. Unconditional Probability of Enrolling in Each School Type By Depression Probability and Racial Stratum



B. Conditional Probability of Attending a Magnet/Charter/Private By Depression Probability and Racial Stratum

(holding all covariates, other than racial stratum and depression, at their means)



Notes

[a] Low depression probability is defined as 0.5 or lower; high probability is defined as over 0.5.

[b] Panel B simulation is based on conditional probabilities generated from Table 2.3, Model 5 (non-white children), and an identical model run on white children only (model results not shown but available upon request).

Although Hypothesis #2 has received preliminary support, the multivariate logistic regression models in Table 2.3 provide a more rigorous assessment. First, I specify a model containing all independent variables and census tract fixed effects but only include the theoretically central non-white respondents in the analysis. Model 1 suggests for this group, depression's predicted effect on non-neighborhood school enrollment (of any type) is negative and significant ($\beta = -1.27, p < 0.01$). Note too that educational attainment also significantly predict non-neighborhood school enrollment for this group. Models 2 and 3, which predict enrollment in a subset of non-neighborhood school options – private or charter and just private – reinforce this pattern and provide additional support for Hypothesis #2. Conditional predicted probabilities based on these models underscore the amplified role depression potentially plays in school sorting among non-whites. Figure 2.1, Panel B compares the depression-based effect on magnet, charter, or private enrollment among non-whites estimated by Table 2.3, Model 1 to an analogous model estimated for whites only (results not shown). Among white children, parental depression has no discernible marginal effect on school choice; however, among non-white children, parental depression is associated with an 11 percentage point (58%) drop in the probability of this outcome (from 19 percent to 8 percent).

TABLE 2.3

Heterogeneous Effects of Primary Caregiver Depression on School Sorting, Logit Models

	Model 1: *Non-Whites*		Model 2: *Non-Whites*		Model 3: *Non-Whites*		Model 4: *All Respondents*		Model 5: *All Respondents*		Model 6: *All Respondents*	
Type of School	Magnet, Charter, or Private		Private or Charter		Private Only		Magnet, Charter, or Private		Private or Charter		Private Only	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood	-1.266**	0.408	-1.626**	0.435	-2.374**	0.658	-0.097	0.500	-0.098	0.491	-0.019	0.498
PCG high depression X Latino							-0.777	0.644	-0.730	0.684	-1.425	0.867
PCG high depression X Black							-1.671	1.347	-3.401**	1.162	-3.522**	1.249
PCG high depression X Other							-5.116**	1.328	-4.947**	1.351	-5.040**	1.423
Child attributes												
Female	-0.313	0.248	-0.298	0.294	-0.521	0.372	-0.191	0.186	-0.189	0.213	-0.353	0.250
Asian	(ref.)		(ref.)		(ref.)		-0.086	0.497	-0.049	0.519	0.531	0.610
Latino	-0.551	0.595	-0.615	0.650	-1.427	0.889	-0.676	0.528	-0.728	0.566	-0.633	0.679
Black	0.169	0.717	0.353	0.773	-0.124	0.985	0.078	0.605	0.320	0.623	0.756	0.639
Other/Multiracial	-0.783	0.591	-1.043	0.697	-2.130*	0.881	-0.656	0.559	-0.818	0.630	-0.810	0.730
Parent/household attributes												
PCG first generation immigrant	0.109	0.376	0.186	0.449	-0.623	0.607	-0.152	0.278	-0.131	0.309	-0.586	0.365
Household income (log)	0.498	0.265	0.762*	0.321	1.308**	0.387	0.470*	0.187	0.614**	0.193	0.831**	0.228
Homeowner	0.733	0.493	1.056*	0.526	0.760	0.595	0.827*	0.416	1.030*	0.421	0.812	0.448
PCG completed some college	1.027**	0.342	1.215**	0.397	1.308*	0.506	0.798**	0.307	0.911**	0.343	0.917*	0.433
PCG Bachelor's degree+	1.451**	0.401	1.277**	0.413	1.199*	0.487	1.099**	0.325	0.861*	0.368	0.792	0.413
PCG marital status: married	-0.364	0.274	-0.509	0.323	-0.378	0.403	-0.309	0.269	-0.453	0.308	-0.245	0.311
Number of children in hhld.	0.060	0.126	0.212	0.155	0.056	0.177	0.010	0.102	0.107	0.119	-0.024	0.133
Constant	-6.312*	2.917	-9.414**	3.453	-13.524**	4.137	-8.373**	1.960	-10.128**	1.981	-11.561**	2.444
Household *N*	1,009		909		799		1,387		1,340		1,207	
Child *N*	1,322		1,189		1,053		1,807		1,741		1,579	
Child-Year *N*	1,534		1,386		1,231		2,103		2,028		1,843	

Notes

[a] All models contain the following fixed effects: census tract of residence, wave of data collection (2006-08) and school level (middle/junior high, high).

[b] Standard errors are clustered by census tract.

[c] $*p < .05$, $**p < .01$ (two-tailed test).

Model 4 provides the most rigorous test of Hypothesis #2 by including respondents of all races and adding in a slate of race-depression interaction terms (the Asian-depression interaction is dropped by the model due to sample size constraints) to assess whether depression's estimated effects are significantly different between whites and non-white groups. When all school choice types are considered, the depressive effect of parental depression only appears stronger among Other/Multiracial children than among whites, providing limited support for Hypothesis #2. However, analogous models that mitigate potential measurement error by predicting enrollment in only a private or charter school (Model 5) or merely a private school (Model 6) suggest parental depression effects also diverge when white children are compared to arguably the most structurally disadvantaged group in the sample: black children. In these two models, the black-depression interaction effect generates a coefficient of -3.4 - -3.5 ($p < 0.01$). The Latino-depression interaction exhibits negative signs but does not reach conventional significance levels, as the black-depression and Other-depression interaction terms do.

In order to further bolster initial hints of support for Hypothesis #2 bearing on racial heterogeneity in depression's effects, I attempt to address emerging skepticism regarding the use of logistic regression models to estimate interaction effects (Mize 2019) by employing a linear (i.e., OLS) framework, which is not subject to the same concerns. Table 2.4, Models 1 – 3 replicate all three models with race-depression interaction terms from Table 2.3 using OLS. These models confirm significant and negative black-depression interaction effects on private/charter or private only enrollment ($\beta = -0.2$, $p < 0.05$). Note, on the other hand, that the black-depression interaction effect is not significant in predicting the broadest school choice outcome (Model 1) and that the Other/Multiracial-depression interaction term that was significant in some of the prior logistic regression models is not here. Given robust evidence of depression's heterogeneous effects on school sorting patterns among blacks versus whites – at least as far as charter or private school

enrollment is concerned – I generate conditional predicted probabilities of enrollment in one of these two school types for depressed- and non-depressed blacks and whites, based on the original logistic regression specification (Table 2.2, Model 5) and visualize the results in Figure 2.2, Panel A. Based on this model, parental depression is not associated with a reduced propensity among white children to enroll in a private or charter school. But among blacks, parental depression appears to reduce the likelihood of this outcome from a baseline of 20% to nearly 0.

TABLE 2.4

Effects of Child, Parent, and Household Characteristics on School Sorting (All Racial Groups), OLS Models

Outcome	Model 1: Magnet, Charter, or Private Enrollment		Model 2: Private or Charter Enrollment		Model 3: Private School Enrollment		Model 4: Home to School Network Distance (log)	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood	-0.003	0.068	-0.004	0.064	0.007	0.062	0.108	0.138
PCG high depression X Asian							-0.342	0.230
PCG high depression X Latino	-0.041	0.071	-0.019	0.068	-0.043	0.064	-0.111	0.147
PCG high depression X Black	-0.169	0.128	-0.216*	0.101	-0.198*	0.100	-0.433*	0.214
PCG high depression X Other	-0.094	0.094	-0.076	0.091	-0.075	0.091	-0.506*	0.236
Child attributes								
Female	-0.019	0.019	-0.014	0.019	-0.017	0.018	0.134**	0.041
Asian	0.003	0.070	0.006	0.069	0.045	0.069	0.233	0.132
Latino	-0.092	0.067	-0.095	0.066	-0.074	0.066	-0.029	0.100
Black	-0.018	0.083	-0.010	0.083	0.019	0.079	0.052	0.159
Other/Multiracial	-0.083	0.069	-0.092	0.071	-0.086	0.070	0.079	0.120
Parent/household attributes								
PCG first generation immigrant	-0.010	0.028	-0.007	0.026	-0.028	0.023	-0.262**	0.077
Household income (log)	0.038*	0.015	0.042**	0.014	0.044**	0.014	0.049	0.026
Homeowner	0.080*	0.038	0.084**	0.032	0.072*	0.031	0.011	0.069
PCG completed some college	0.069*	0.032	0.069*	0.032	0.050	0.030	-0.030	0.061
PCG Bachelor's degree+	0.129**	0.044	0.087*	0.043	0.078	0.041	0.053	0.097
PCG marital status: married	-0.015	0.025	-0.021	0.025	-0.006	0.018	-0.052	0.080
Number of children in household	-0.001	0.009	0.007	0.009	0.000	0.007	-0.067**	0.023
Constant	-0.378*	0.168	-0.388*	0.157	-0.374*	0.157	1.311**	0.255
Household *N*	1,682		1,682		1,682		1,565	
Child *N*	2,245		2,245		2,245		2,057	
Child-Year *N*	2,752		2,752		2,752		2,468	

Notes

[a] All models contain the following fixed effects: census tract of residence, wave of data collection (2006-08) and school level (middle/junior high, high).

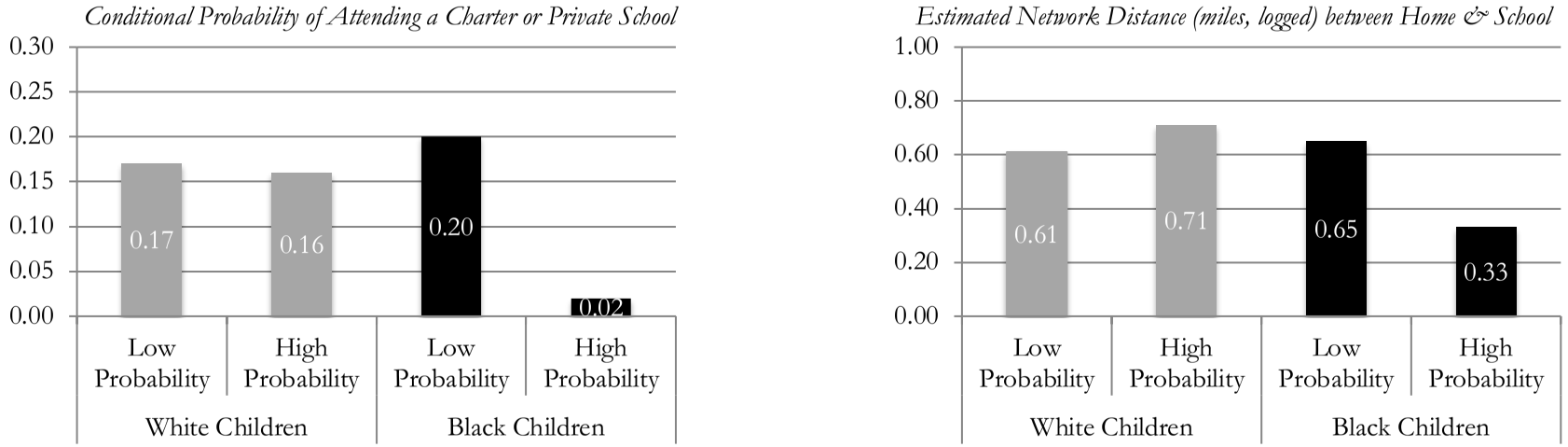
[b] Standard errors are clustered by census tract.

[c] *$p < .05$, **$p < .01$ (two-tailed test).

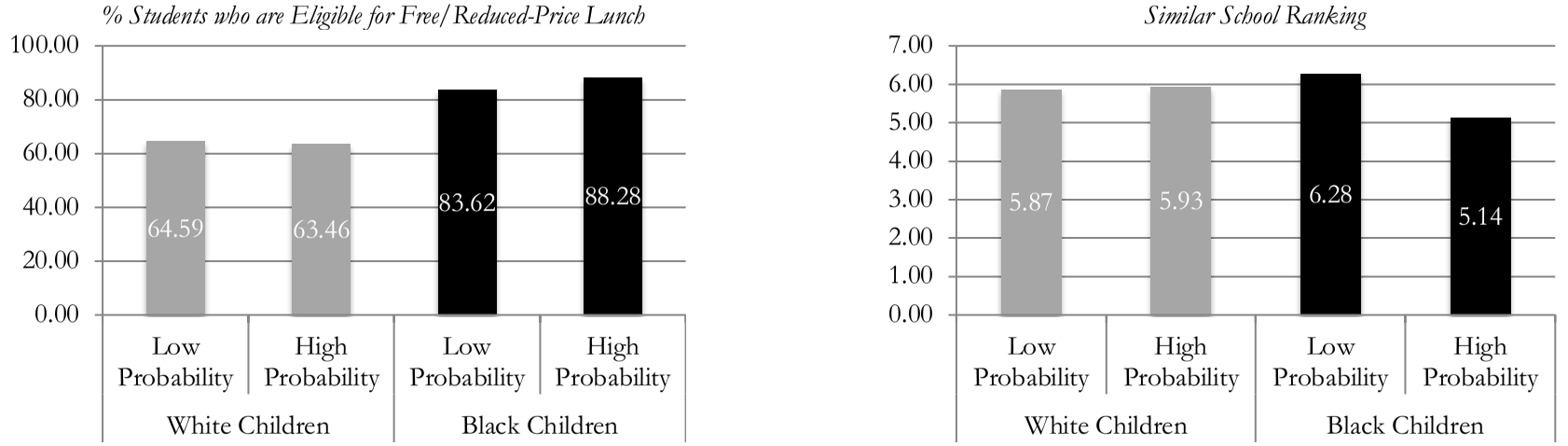
FIGURE 2.2

Estimated School Sorting Outcomes and School of Enrollment Characteristics by Race/Ethnicity and Probability of PCG Depression

A. Conditional School Sorting Outcomes



B. Conditional Means of Key Characteristics of Public Schools of Enrollment



Notes

[a] Low depression probability is defined as 0.5 or lower; high probability is defined as over 0.5.

[b] Panel A simulations are based on Table 2.3, Model 2 & Table 2.4, Model 4, respectively. Panel B simulations are based on Table 2.6, Models 1 & 2. Note that Table 2.6, Model 1 does not generate significant depression-black interaction terms.

Finally, to generate additional evidence bearing on Hypothesis #2, I switch from the binary decoupling outcome to a continuous measure of network distance (logged) between the L.A.FANS-reported census tracts of residence and school of enrollment for the 90% of child-years for which this distance could be calculated. Depression's effect on this distance, net of all covariates and tract fixed effects, could be interpreted as indicating whether the condition constrains parents' preferences for, or constraints to, sending their children to a non-assigned school, especially one that is far away. This outcome has the added benefit of not relying on any assumptions regarding school types and catchment zones.

Model 4, which predicts this continuous outcome, suggests a black child who has a depressed parent is sent to a school significantly closer to home than a similarly situated black child of a non-depressed parent. Figure 2.2, Panel A shows that parental depression is estimated to cut the estimated home-to-school distance in half among black children (from ~0.65 log miles to ~0.33 log miles), all else equal, but no clear depression distance penalty is evident among white children. The heterogeneous pattern of depression effects on school sorting is thus consistent across very different model specifications, further bolstering Hypothesis #2.

Potential Confounders of Depression's Effects on School Sorting

The analyses above support the hypothesized parental depression-school selection link, especially for minority families and perhaps black families. These findings hold across multiple school sorting operationalizations and when comparing socio-demographically similar children *residing within the same neighborhood*. However, one could counter that the observed link may be confounded by differences in parents': (1) sense of self-efficacy, (2) expectations of, and investment in, their children's education, and (3) cognitive and socioemotional skills among their children, which may shape whether they can get into some non-traditional school types.

In Table 2.5, I directly test these possibilities by returning to my most complete logit models, specified for non-white children only (Panel A), and adding in well-validated measures of parental self-efficacy (i.e., the Pearlin Self Efficacy Index), educational expectations (proxied by the years of education they expect their children to receive) and investments (proxied by the total number of extracurricular activities their children are involved in), and child cognitive skills (i.e., Woodcock-Johnson Letter-Word Identification test) and socioemotional skills (i.e., Behavioral Problems Index).

TABLE 2.5

Models of School Sorting with Potential Depression Confounders, Partial Output

A. Non-White Children Only (Logit Models)

Type of School	Model 1: Magnet, Charter, or Private		Model 2: Magnet, Charter, or Private		Model 3: Magnet, Charter, or Private		Model 4: Magnet, Charter, or Private		Model 5: Charter or Private		Model 6: Private Only	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood	-1.226**	0.418	-1.140**	0.333	-1.296**	0.370	-1.223**	0.364	-1.381**	0.421	-1.572*	0.704
PCG Pearlin Self-Efficacy Index	0.210	0.151					0.173	0.195	0.120	0.263	0.088	0.367
PCG educational expectations			0.444**	0.134			0.409**	0.138	0.492**	0.177	0.566*	0.239
PCG extracurricular investment			0.337	0.199			0.371	0.256	0.431*	0.199	0.331	0.188
Child W-J Letter-Word score					0.339*	0.150	0.262	0.157	0.228	0.151	0.294	0.199
Child Behavioral Problems Index					0.018	0.146	0.094	0.162	0.030	0.194	0.007	0.247
Household *N*	1,004		695		666		658		598		515	
Child *N*	1,317		993		942		934		848		737	
Child-Year *N*	1,527		1,196		1,121		1,111		1,010		878	

B. All Children (OLS Models)

Outcome	Model 1: Charter or Private		Model 2: Charter or Private		Model 3: Charter or Private		Model 4: Charter or Private		Model 5: Private Only		Model 6: Magnet, Charter, or Private	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood	0.003	0.064	0.068	0.090	-0.018	0.081	0.006	0.078	0.016	0.081	0.028	0.083
PCG high depression X Black	-0.213*	0.098	-0.280*	0.122	-0.275*	0.134	-0.237*	0.122	-0.249	0.131	-0.213	0.139
PCG Pearlin Self-Efficacy Index	0.021	0.013					0.021	0.019	0.014	0.019	0.024	0.018
PCG educational expectations			0.019*	0.008			0.017*	0.008	0.014*	0.007	0.020*	0.009
PCG extracurricular investment			0.053**	0.015			0.057**	0.018	0.038*	0.015	0.048*	0.023
Child W-J Letter-Word score					0.024*	0.011	0.017	0.011	0.017	0.010	0.019	0013
Child Behavioral Problems Index					0.001	0.010	0.008	0.010	0.006	0.008	0.010	0.010
Household *N*	1,676		1,217		1,153		1,142		1,142		1,142	
Child *N*	2,238		1,779		1,675		1,662		1,662		1,662	
Child-Year *N*	2,742		2,286		2,120		2,104		2,104		2,104	

Notes

[a] Control variables included in each model are identical to the models included in Table 2.3, Model 1-3 (Panel A) and Model 4-6 (Panel B) (i.e., with tract fixed effects). Full results available upon request.

[b] To facilitate interpretation, all covariates above, other than PCG depression, are standardized to have a mean of 0 and standard deviation of 1.

[c] Standard errors are clustered by census tract.

[d] *$p < .05$, **$p < .01$ (two-tailed test).

The models' partial output reveals that parental depression exerts a statistically-significant, negative effect on each school enrollment outcome among non-white children, regardless of whether these potential confounders are included separately (Models 1 – 3) or together (Models 4 – 6). Panel B runs a similar set of models on the full sample, but uses the more narrowly constructed charter or private school enrollment outcome because racial heterogeneity in depression's effects were clearer with regard to these school types. Because race-depression interaction terms are included, I use an OLS (i.e., linear probability model) specification. Models 1 – 4 suggest parents' educational expectations and extracurricular investment and perhaps children's cognitive skills predict charter and private school enrollment for the full sample. But the theoretically-important black-depression interaction effect remains significant or marginally significant ($p < 0.05$) across all of them, except for models that operationalize school choice more narrowly (i.e., private only) or more broadly (i.e., magnet, charter, or private) (Models 5 and 6). These results generate additional support for Hypothesis #2 and increase the plausibility of a direct depression effect on school sorting, at least among non-white and perhaps especially black children.

Consequences of Depression Effects vis-à-vis Public School Enrollment

Having established a robust effect of depression on exercising school choice in general among non-white families, and especially with regard to private and charter school enrollment among black families, my final analysis leverages data drawn from educational administrative sources to assess the potential consequences of depression-stratified school sorting within this subgroup. To this end, I estimate disparities in pupil socioeconomic disadvantage (operationalized by % of students receiving free or reduced price lunch) and Similar Scores Ranking (i.e., a value-added measure of school quality) on the basis of child race and parental depression.

Because the data exclude analogous information on private schools, this analysis only paints a partial picture of depression's effects on educational quality. Moreover, non-random selection into the public sector (versus the private) sector must be accounted for to generate valid estimates of variables' effects on public school students' school characteristics. To this end, in Table 2.6, I employ Heckman-adjusted models that consist of a selection equation modeling selection into the public sector (versus the private) sector – using religiosious congregation membership as an exclusion restriction – and generate a core model estimating the effects of parental depression directly, and indirectly via interactions with race, on the socioeconomic disadvantage (Model 1) and value-added rankings (Model 2) of the schools actually attended by public school enrollees. I employ county region fixed effects rather than census tract fixed effects for these models to ensure they converge (for more details on these Los Angeles County regions, see Sampson, Schachner, and Mare (2017) and Schachner and Sampson (2020)).

Model 1 suggests that parental depression is independently associated with a statistically-significant 13 percentage point increase in exposure to disadvantaged peers among public school students among Other/Multiracial children, while the analogous depression-based penalty is nearly half the magnitude and not statistically-significant among black children. On the other hand, Model 2 suggests parental depression independently predicts a reduction of nearly 1.2 deciles ($p < 0.01$) in the Similar School (i.e., value-added) ranking of the school attended among black children and half a decile among Latino children ($p < 0.05$) but no depression-based penalty is detectable among white children or Other/Multiracial children. Marginal depression effects for black and white children estimated based on these two models are visualized in Figure 2.2, Panel B. Again, depression-based disparities in public school characteristics are virtually nonexistent for whites but sizable among blacks, especially with regard to value-added rankings.

TABLE 2.6

Effects of Child, Parent, and Household on School of Enrollment Characteristics, Heckman-Adjusted Models

School of Enrollment Characteristic	Model 1: % Eligible for Free or Reduced-Price Lunch				Model 2: Similar School Ranking			
	Selection Model		Core Model		Selection Model		Core Model	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG high depression likelihood	-0.224	0.280	-1.128	3.349	-0.215	0.209	0.060	0.447
PCG high depression X Asian	5.669**	2.006	8.498	9.954	4.918**	0.334	0.474	0.889
PCG high depression X Latino	0.256	0.276	-4.981	3.315	0.095	0.339	-0.525*	0.243
PCG high depression X Black	0.575	0.422	5.786	6.147	0.555	0.522	-1.194**	0.422
PCG high depression X Other	2.036**	0.471	12.619**	3.799	2.342**	0.418	1.015	0.643
Child attributes								
Female	0.088	0.085	-1.134	1.209	0.047	0.092	0.170	0.158
Asian	-0.129	0.175	0.101	3.730	-0.155	0.149	-0.580	0.361
Latino	0.085	0.160	24.567**	3.733	0.150	0.148	-0.218	0.367
Black	0.017	0.237	20.893**	3.770	0.031	0.251	0.447	0.562
Other/Multiracial	0.234	0.166	3.845	3.160	0.203	0.157	-0.118	0.370
Parent/household attributes								
PCG first generation immigrant	0.168	0.108	4.590*	1.910	0.215*	0.095	0.303*	0.154
Household income (log)	-0.199**	0.058	-2.122	1.376	-0.193**	0.061	-0.096	0.073
Homeowner	-0.148	0.177	-8.593**	2.324	-0.240	0.183	0.352	0.203
PCG completed some college	-0.153	0.156	-4.240**	1.580	-0.155	0.153	0.206	0.220
PCG Bachelor's degree+	-0.324**	0.102	-8.083	4.306	-0.300*	0.131	0.097	0.288
PCG marital status: married	0.118	0.121	0.382	1.616	0.123	0.130	-0.170	0.196
Number of children in household	-0.020	0.058	0.387	0.589	0.011	0.051	-0.072	0.065
Exclusion restriction								
Member of a religious congregation	-0.354**	0.107			-0.376**	0.079		
Constant	3.749**	0.798	82.20	12.939	3.664**	0.750	6.557**	0.485
Selected Child-Year *N*	2,315				2,293			
Nonselected Child-Year *N*	436				458			

Notes

[a] All models contain the following fixed effects: county region of residence, wave of data collection (2006-08) and school level (middle/junior high, high).

[b] Standard errors are clustered by county region of residence.

[c] *$p < .05$, **$p < .01$ (two-tailed test).

DISCUSSION & CONCLUSION

This study revisits the longstanding hypothesis that parental depression constricts children's development and proposes an unexamined mediating pathway that may partially explain it: contextual selection. I argue that parents who are more likely to be depressed are less likely to sort their children into enriching neighborhood, school, and childcare environments, and these dynamics are likely amplified among non-white families. Contemporary educational and residential opportunity structures in large American cities – where copious choice, information saturation, and high-stakes parenting are the norm – may exacerbate this depression disadvantage. Few contexts embody this description more than Los Angeles County during the 2000s. I leverage residential and educational data on over 2,000 Angeleno children to examine whether the predicted link between parental depression and school selection is evident here. Indeed it is. Regression models suggest children of parents with a high likelihood of depression are less likely to attend a private or public option other than their residentially-assigned public school, even when comparing similarly-situated families within the same neighborhood. These depression-based disparities are larger among disadvantaged minorities, and particularly among blacks.

This study has important implications for research on intergenerational stratification and the life-course, which traditionally focuses on how parental resources, skills, and health shape day-to-day parenting practices that in turn stratify child development. Given that children's cognitive and socioemotional development is more malleable in early years (i.e., before age 5), when the family domain is the dominant force of socialization, this orientation is well-justified. However, recent studies suggest other environmental contexts – such as neighborhoods, schools, and childcare settings – also exert large, causal effects on older children's cognitive and socioemotional development. Thus, understanding how and why certain parents disproportionately sort into

environmental contexts conducive to child development is an important line of inquiry for mediation-minded stratification scholars espousing a life-course perspective.

The neighborhood attainment and school sorting literatures are beginning to inform these important questions. Recent contextual sorting research supplements the literature's longstanding focus on race and income with examinations of how parental factors deemed central to child development (e.g., educational attainment and cognitive skills) directly affect children's contextual conditions, and in turn, their life chances (Schachner and Sampson 2020). Put simply, contextual selection is being characterized by sociologists not only as a structural sorting process (Krysan and Crowder 2017). but also an intergenerational reproduction process (Sastry and Pebley 2010; J. N. Schachner 2020). The present study builds on these developments by showing how another parental factor important to children's development – depression – may interact with structural disadvantage and liberalizing opportunity structures to shape school inequality. In doing so, it simultaneously highlights parental health as a rarely examined driver of neighborhood, school, and childcare sorting that deserves more scrutiny.

This study also emphasizes the importance of the school as a distinct social context from the neighborhood with a sorting process that implicates distinct parental factors. Indeed, there is a large imbalance in sociological attention paid to neighborhood, versus school, sorting processes. This imbalance may reflect the widely-held assumptions that neighborhood and school quality are tightly linked and that neighborhoods exert stronger effects on child development than do schools (Wodtke and Parbst 2017). However, in many American cities school choice regimes have enabled a large portion of children to attend non-neighborhood schools (Bischoff and Tach 2018, 2020; Candipan 2019, 2020). Moreover, recent research suggests that schools meaningfully stratify children's outcomes, even among children residing within the same school district (Deming 2014; Lloyd and Schachner 2020). Future sociological studies of contextual sorting should mitigate this

balance by probing *school* sorting as a social process and by supplementing race and class-based explanations with examinations of parental cognitive, socioemotional, and physical health effects on this outcome.

Limitations, Extensions, and Policy Implications

I note several important limitations of this study. By focusing on educational sorting processes in one ecological context during one temporal era, I reveal that parental depression and disadvantage may shape school sorting under certain circumstances but I cannot speak to the external generalizability of the findings. Future studies should leverage geographic and temporal variation to test theories positing whether and why parental depression shapes school and neighborhood sorting to a greater degree in certain metropolitan areas, school districts, and time periods than in others. The theoretical framework proposed in this study suggests a testable hypothesis: large, sprawling, and fragmented cities that are rich in school and neighborhood choices and information on their quality but poor in transit connectivity options may place the greatest burden on depressed parents and may amplify depression's effects on school sorting outcomes. This hypothesis should be examined not only via large-scale quantitative analyses but also qualitative research on school decision-making that theoretically selects case studies based on variation in the aforementioned axes (i.e., city size/complexity, school choice liberalization, transit connectivity) and that stratifies parent respondents by race/class, as is often custom, but also depression probability. Qualitative studies will be especially effective in probing the mechanisms by which parental depression shapes school sorting. In this study, due to data constraints, I proposed but did not test a set of potentially salient mechanisms (e.g., risk aversion, social networks, institutional navigation).

If the parental depression-contextual selection link is evident across multiple places, causal analyses will be warranted. I attempted to rigorously account for confounding factors that could bias

estimated parental depression effects by incorporating a wider range of covariates than administrative data typically permit (including measures of parental educational expectations and investments) and by incorporating tract-level fixed effects. Given that depression symptoms ebb and flow, future studies could leverage longitudinal data on depression symptoms – ideally captured via a medical diagnosis rather than a self-reported survey as this one does – and school enrollment along with parent-level fixed effects to solidify a more plausibly causal depression-school sorting link. Difference-in-difference analyses could gauge whether exogenous shocks to school systems, such as liberalized school enrollment rules, the introduction of school quality data, or the rapid expansion of non-traditional school options amplify the parental depression-school sorting link. If this link is solidified, a key next step will be to assess whether the parental depression-school sorting connection truly mediates the parental depression-child development association. Previous studies suggest enrollment in a charter, magnet, or private school *may* exert causal effects on children's outcomes, especially among minorities residing within the core city, increasing the plausibility of a mediating role played by parental depression and school selection. Future studies should leverage causal mediation analyses to further test this possibility.

If such analyses are confirmatory, then public policies will need to adjust accordingly. At the individual level, treating depression using efficacious therapeutic interventions – and disproportionately targeting and subsidizing treatment for minority parents – would be important. On a larger scale, architects of choice-based policies will have to reckon with the unintended consequences of marketization on disadvantaged parents, especially those with cognitive and socioemotional limitations. Unbridled choice may help individuals who are already well-equipped to navigate complex markets, but it likely comes at the expense of the most vulnerable families – whom choice-based reforms were purportedly intended to help.

3

Racial Stratification and School Segregation in the Suburbs: The Case of Los Angeles County

Suburbs have long offered an alluring escape hatch for advantaged, white families whose racial anxieties were triggered by urban neighborhoods' rapidly changing demographics (Frey 1979; Massey and Denton 1993; Sugrue 2014). Access to highly-resourced and homogenous suburban school districts rendered this residential trajectory particularly appealing to white households with children – especially as upper-class parents' preferences for educational investments, such as access to high-quality schools, strengthened (Kornrich and Furstenberg 2013; Owens 2016; Reardon 2011). Indeed, suburban schools could be considered the linchpin of American segregation.

But suburban schools are not what they used to be. Recent work documents the demographic transformation of American suburbs from lily white enclaves to multiracial "melting pots" (Frey 2001; Timberlake, Howell, and Staight 2011); suburban public schools have followed suit (Fry 2009). Thus, the romanticized suburban ideal espoused by white, upper-class parents of sending their children to rich and white local public schools (Johnson 2014; Lareau 2014; Rhodes and Warkentien 2017) may be less tenable than it once was.

How do racially advantaged parents respond to diverse suburban neighborhoods and schools? In an era of low residential mobility, liberalized school assignment rules, and persistent racial biases, school enrollment decisions emerge as a possible pathway by which these parents might buffer their children from disadvantaged minorities living nearby. A growing body of sociological work argues that white and perhaps Asian families exploit liberalizing school enrollment rules and proliferating non-catchment school options – e.g., private, magnet, charter – to avoid high

concentrations of disadvantaged minority children in local schools (Candipan 2020; Fairlie and Resch 2002; Renzulli and Evans 2005; Saporito and Lareau 1999). These dynamics are thought to promote integrating neighborhoods and segregating schools (Rich, Candipan, and Owens 2019).

However, prevailing minority avoidance accounts rely heavily on theories and data from core-city school districts (Bischoff and Tach 2020; Welsh and Swain 2020), where non-catchment school options and transportation access to them are often plentiful. Suburban parents likely face a markedly different educational opportunity structure, one in which distances to non-local schools are much longer, and magnet, charter, and private schools are in much shorter supply. What this school choice set looks like and how advantaged suburban parents navigate it in reaction to race and class diversity remains largely unknown, despite the fact that a plurality of American children attend suburban schools.

I propose a rarely-considered solution to the puzzle of enduring racial preferences, diverse suburban communities, and a dearth of non-traditional school options in the suburbs. I argue that white and Asian families, like their advantaged core-city counterparts, seek to buffer their children from high concentrations of Latino and black children in local schools. Yet because non-local options are scarce, many of these white and Asian parents send their children long distances to private, charter, or magnet schools – or traditional public schools outside their catchment zone.

Using fine-grained data from the Los Angeles Family and Neighborhood Survey, which captures residential and educational sorting outcomes for over 2,000 children ages 5 through 17 during the 2000s, linked to educational administrative data from Los Angeles County and the California Department of Education and ArcGIS geospatial data, I test this argument using two sets of logistic regression models. First, congruent with extant literature, I examine whether white and Asian children, regardless of suburban versus core-city location, are more likely to bypass their locally-assigned public school as the concentration of Latino and black students in the school

increases. I also examine whether this minority avoidance pattern is stronger within this subsample than it is among similarly-situated Latino, black and other/multiracial children, as the minority avoidance Second, I diverge from existing studies by testing whether this minority avoidance effect is stronger among *suburban* whites and Asians than it is among *core-city* whites and Asians. My integrated dataset is uniquely equipped for these empirical examinations because the sample spans the vast county's core-city school district – Los Angeles Unified School District (LAUSD) – and suburban districts; includes families that opted for traditional public, magnet, charter, and private schools; encompasses four major race-ethnic groups – including Latinos and Asians; and tracks rarely-included racial proxies that may confound observed minority avoidance effects (e.g., value-added estimates of local public school quality and local crime rates) for the full sample.

The findings strongly support my core arguments. Higher concentrations of Latino and black students within their catchment-assigned public schools predict white and Asian children opting out – and the minority avoidance effects are significantly stronger for this group than they are for Latino, black, and other/multiracial children doing so. Moreover, among whites and Asians, the minority avoidance school sorting pattern is stronger among suburban than among similarly-situated core-city (i.e., LAUSD) families, even though the latter group is comparatively flush with non-traditional school options (i.e., magnets, charters, privates) and transportation options to access them. These core patterns hold even when accounting for catchment schools' socioeconomic composition, test score-based proxies of school quality, crime rates in the surrounding community, and differences in families' plausible school choice sets.

In pivoting from the traditional sociological focus on residential flows from urban to suburban communities ("white flight") and educational sorting within the core city ("minority avoidance") to educational sorting within the suburbs, this study both broadens and reshapes our understanding of residential and educational segregation processes. The prevailing portrayal of

advantaged parents facing a binary choice to realize their racial preferences – either (1) bundling their neighborhoods and schools within affluent suburbs or (2) decoupling the two within the core city via private, magnet, and charter school options – may be too simplistic. This study proposes a third path, in which diversifying suburbs and sparse non-traditional school options spur white and Asian families to send their children long distances to more racially advantaged but often poorer-performing public schools. Beyond widening the lens of sociological research on racial preferences and segregation processes, this study challenges stratification scholarship to reconceive opportunity structures not as fixed but as occasionally malleable – especially for highly-motivated and structurally advantaged households when they are unsatisfied with the options available.

SUBURBS, SCHOOLS, AND SEGREGATION

Residential race and class segregation remains a central feature of American society, spurring a vast body of work on the mechanisms that generate and sustain it (Farley and Frey 1994; Logan, Stults, and Farley 2004; Massey and Denton 1993; Reardon and Bischoff 2011). For over fifty years, the "white flight" hypothesis has dominated this line of inquiry. The account holds that large post-war migration flows of blacks from the rural South to northern core-city neighborhoods drove declines in core-city white populations and whites' exodus to the suburbs. Racial antipathy converged with vast increases in suburban housing, highway construction, and job decentralization to fuel these city-to-suburb migration flows. Moreover, structural and institutional mechanisms barred blacks from doing the same. These dynamics fostered a vicious cycle in which core-city neighborhoods became increasingly poor and racially isolated and municipal resources became increasingly scarce, spurring more whites to leave and so on (Farley et al. 1978; Galster 1990; Massey and Denton 1988; Schelling 1971; Sugrue 2014; Taeuber and Taeuber 1965; Wilson 1987:19).

Schools have long featured prominently in theoretical accounts of segregation, in general, and white flight to the suburbs, in particular. In this view, it is not merely the presence of disadvantaged minority neighbors that drives whites out of the core city but particularly the presence of disadvantaged minority children in the local public schools that exacerbates racial anxieties (Goyette et al. 2014). These anxieties, combined with the availability of highly advantaged suburban schools, likely lead white parents to translate their racial preferences into city-to-suburb migration flows (Coleman 1975). Though several scholars have challenged this premise (Farley, Richards, and Wurdock 1980; Pettigrew and Green 1976; Rossell 1975), more recent analyses support it (Baum-Snow and Lutz 2011; Clark 1987; Logan, Zhang, and Oakley 2017; Reardon and Owens 2014; Reber 2005; Welch and Light 1987).

Scholarship on the patterns and drivers of white city-to-suburb residential flows dwarfs research on white households' residential and educational decision-making processes once they arrive in the suburbs. For much of the twentieth century, this blind spot was unproblematic. American suburbs appeared to fulfill their residents' ideals, with high homeownership rates, advantaged schools, and low crime levels (Duany, Plater-Zyberk, and Speck 2010). Demographically, suburban communities and their schools were almost entirely white prior to the 1980s (Frankenberg, Lee, and Orfield 2003; Massey and Tannen 2018), and formidable structural barriers to suburban mobility for non-whites appeared to preclude change (South and Crowder 1997). Thus, racial dynamics were likely trivial drivers of *intra-suburban* residential and educational decisions.

But today, suburban communities' demographics are radically different. Fueled by higher rates of suburbanization among native-born minorities (Massey and Tannen 2018) and massive flows of immigrants bypassing core-city neighborhoods, American suburbs have experienced a "diversity explosion" (Frey 2001, 2014; see also Massey and Denton 1988; Timberlake et al. 2011). In 2010, the white share of America's suburban population was only 68% (down from 93% in 1970),

while the combined black and Latino proportion was nearly 25% (Massey and Tannen 2018). Due, in part, to cohort demographic differences, suburban schools are typically less white than their surrounding communities; the white share of suburban schools stood at 59% in the mid-2000s (Fry 2009; see also Frankenberg and Orfield 2012; Logan 2014). The share is even lower in Sun Belt suburbs. For example, in 2000, white students made up only 18% of students in Long Beach, California – a populous Los Angeles suburb (Frankenberg et al. 2003).

School-Based Minority Avoidance in the City – and the Suburbs?

How do racially advantaged parents navigate diverse suburban neighborhoods and schools? Theories of minority avoidance propose two possible options: (1) residentially relocating to whiter suburbs or (2) remaining in place but sending their children to whiter schools. A small but growing set of sociological studies considers the first path (Parisi, Lichter, and Taquino 2019; see also Rich 2018), but very few examine the second. This is an important gap because parents' educational and residential decisions are no longer necessarily one and the same. Today, non-traditional public school options, such as charter, magnet, and private schools, are numerous, especially in large metropolitan areas. Moreover, many school districts have liberalized school assignment rules, which were historically based strictly on residential catchment zones, (Archbald 2004; Berends 2015; Berends et al. 2019; Orfield and Frankenberg 2013). If parents have considerable discretion over school enrollment, perhaps white parents in diverse suburbs disproportionately exercise it to send their children to magnet, charter, or private schools with more advantaged student bodies.

A burgeoning strand of literature is congruent with minority avoidance school enrollment behaviors, but a large share of these analyses are ecological and no known study explicitly predicts and tests whether minority avoidance patterns are stronger in the core-city versus suburbs. The ecological analyses find that higher levels of neighborhood (often operationalized as the school

district or PUMA, rather than the census tract) disadvantaged minority and especially black concentration predict higher rates of white enrollment in charter schools (Renzulli and Evans 2005) and private schools (Reardon and Yun 2002) and consequently, local public schools containing fewer whites than neighborhood socio-demographics would imply.

Household-level analyses of school sorting, though scarcer and rarely disaggregated by core-city versus suburban location, tell a similar story. A greater proportion of blacks in whites' local residential context and/or locally-assigned public school is associated with reduced perceptions of school quality (Goyette, Farrie, and Freely 2012) and increased flight to both private schools (Fairlie and Resch 2002; Saporito 2009) and to public schools of choice, such as magnets or charters (Johnston 2015; Saporito 2003). In multiracial American cities, patterns of black avoidance plausibly apply to Asians, as well as whites (Johnston 2015). These minority avoidance behaviors appear driven not by families using race as a proxy for correlated features such as test scores and crime but instead by race-specific preferences (Billingham and Hunt 2016; Saporito 2003; Saporito and Lareau 1999).

Crucially for the purpose of the present study, recent ecological and household-level studies are converging on *school supply* as a key moderator for minority avoidance patterns. Concretely, a higher concentration of proximate non-traditional school options (e.g., private, magnet, charter schools) appears to strengthen the effect of local disadvantaged minority concentration on the white and perhaps Asian families' propensity to exit their residentially-assigned public schools (Bischoff and Tach 2018, 2020; Candipan 2019, 2020; Rich et al. 2019; Saporito and Sohoni 2006). No known study has directly compared the density of charter, magnet, and private schools between the core-city and the suburbs, but suburban areas likely lack a comparably robust and dense ecosystem of non-traditional school options. Thus, even if white and Asian suburban families espousing similarly strong anti-black and Latino preferences as similarly situated core-city families, the comparatively

sparse concentration of non-traditional school options and transportation infrastructure may stymie their objectives. Another factor predicting weaker minority avoidance effects in the suburbs versus the core-city is normative in nature: the idealized vision of a "package deal" (Rhodes and Warkentien 2017) of neighborhoods and local public schools likely remains particularly alluring for suburban parents (Holme 2002; Johnson 2014; Johnson and Shapiro 2004; Lareau and Goyette 2014) compared to core-city parents. Based on these assumptions, we might expect minority avoidance school enrollment patterns to be stronger in the core-city than in the suburbs.

However, I argue that these assumptions may be flawed and that the predicted core-city versus suburban pattern may, in fact, be reversed. First, we might expect race-based preferences to be stronger among suburban white and Asian families than among core-city white and Asian families given that they selected, albeit at some prior point in time, to reside within a less racially diverse neighborhood context than core-city families did. Second, prior studies may not properly conceptualize and operationalize school supply, especially when strong preferences for non-traditional school options and relatively unconstrained resources (e.g., in the form of transportation and private school tuition) are in play.

Regarding the latter point, several recent studies operationalize non-traditional school supply as the concentration of private, magnet, and charter schools within a two-mile radius (e.g., Candipan 2020; Denice and Gross 2016). School supply moderation effects based on these measures may be misleading for two key reasons. First, highly motivated parents in low density (i.e., suburban) neighborhoods may be willing to drive much further than two miles to access a more desirable school, especially in Sun Belt metropolitan areas where long commutes are the norm (Kneebone and Holmes 2015). Second, a nontrivial portion of white and Asian families may engage in minority avoidance not via charters, magnets, or privates but by enrolling in *traditional* public schools outside of their residential catchment zone, or even outside of their school district. *Intradistrict* and *interdistrict*

open enrollment programs facilitate these behaviors. The former entails formally requesting a waiver for a child to attend a non-assigned traditional public school within the residentially-assigned district, while the latter entails requesting permission to send a child to a public school in another district (Wixom 2017; see also Brunner, Cho, and Reback 2012; Carlson, Lavery, and Witte 2011; Lavery and Carlson 2015; Reback 2008; Wells 1993). Valid reasons for such requests might include a recent move, transportation necessities, employment proximity, or over-enrollment in the assigned public school. Racial preferences may lurk beneath the surface of these inter- and intradistrict requests, yet empirical evidence of them is relatively scarce. A non-legal pathway to neighborhood-school decoupling is also plausible. In *Cutting School: The Segrenomics of American Education,* (Rooks 2017) documents the pervasiveness of parental cheating to ensure their children attend a more desirable (often whiter) public school. Faking residential addresses (e.g., using a relative's address) is a common strategy.

THE PRESENT STUDY

In sum, extant studies suggest minority avoidance-based school sorting patterns among white and Asian families when pooled across core-city and suburbs (Hypothesis #1). The literature's strong focus on hyper-local non-traditional school supply (e.g., density within two miles of one's home) as a moderator of these patterns might imply weaker minority avoidance patterns in neighborhoods where charters, magnets, and privates are scarcer (e.g., the suburbs). However, I argue that suburban white and Asian families may in fact exhibit stronger minority avoidance school sorting patterns due, perhaps, to stronger racial preferences and weaker transportation, resource, and policy constraints to neighborhood school opt-out than is often assumed (Hypothesis #2).

Rigorously testing the first hypothesis and especially the second poses stringent data requirements that few prior studies meet. Most related research employs ecological data, examines

neighborhood and school sorting outcomes separately, rather than both simultaneously (Lareau and Goyette 2014), or operationalizes neighborhood at a much larger spatial scale (e.g., school district or PUMA) than residential and school sorting theories imply. An appropriate dataset must simultaneously track children's census tract locations and school enrollment outcomes, leveraging geocoded public school catchment boundaries to determine whether children attended their assigned school. Although administrative school enrollment data – disproportionately from core-city school districts – is increasingly used, this study's theoretical framework requires enrollment data for suburban children and for private school attendees. Inclusion of private school attendance is crucial to prevent biased estimates of neighborhood-school decoupling predictors. Another factor crucial to mitigating bias is a method for capturing differences in the plausible school choice sets available to various households based on spatial proximity. Lastly, school enrollment data is ideally linked to administrative data on socio-demographic composition and school quality proxies (e.g., test scores) to permit comparison of selected and assigned school characteristics.

As detailed below, I construct a dataset that fulfills all of these requirements. I track the schools of enrollment and census tracts of residence for over 2,000 Los Angeles County children linked to administrative data on school catchment zones, school type and schools' average test scores and socio-demographics. My analytic sample encompasses all four major racial/ethnic groups – including Latinos and Asians – and spans both the core-city district of LAUSD, as well as nearly fifty suburban school districts in the county.

RESEARCH DESIGN AND METHODS

To test the hypotheses outlined above, I leverage data at the school, neighborhood, household, and child levels. To describe trends in core-city district (LAUSD) and suburban district schools'

demographic composition and non-traditional school availability during the 2000s, I use administrative data from the California Department of Education's Academic Performance Index reporting system and school directories.

My multivariate analyses rely on micro-level data from the Los Angeles Family and Neighborhood Survey (L.A.FANS), a longitudinal study that explores the multilevel sources of inequality and wellbeing within Los Angeles County. Wave 1 data collection was conducted in 2000-2002, with a probability sample of 65 county neighborhoods (operationalized as census tracts). Within each tract, a sample of blocks was selected, and within selected blocks, a sample of households was selected. Within these households, researchers attempted to interview one randomly selected adult (RSA) and, if present, one randomly selected child (RSC) under age 18. They also interviewed the primary caregiver (PCG) of the child (who might or might not be the RSA but was almost always the child's mother) and a randomly selected sibling of the RSC (SIB). Ultimately, 2,306 RSCs, 1,378 SIBs, and 1,957 PCGs overseeing these children were included in wave 1 data collection. Follow-up interviews were conducted with wave 1 respondents between 2006 and 2008 if they still resided within L.A. County and were deemed eligible (wave 2 response rate: 63%). A supplementary replenishment sample of respondents who did not participate in wave 1 were added to wave 2 data collection to ensure a sample that was large and representative of the county. This replenishment sample contained 246 RSCs and 141 SIBs. For more details on the L.A.FANS design, see Sastry et al. (2006).

Because this study centers on K-12 school sorting processes, I specify my sample to include child-wave combinations in which the RSC or SIB were aged 5 to 17, enrolled in neither college nor special education, and for whom a complete L.A.FANS child survey was available. This initial specification yields 3,180 child-wave combinations consisting of 2,539 unique child respondents nested within 1,910 unique primary caregivers/households. 2,906 (91%) of these eligible child-wave

combinations contain valid school enrollment information and census tract geocodes (using 2000 tract boundaries). I then exclude 5% of these remaining child-wave combinations (N=137) which lacked valid data for any of the core independent variables described below. 2,769 child-wave combinations, 2,252 child respondents, and 1,687 primary caregivers/households remain.

I link the L.A.FANS-provided school identification codes and geocoded census tracts for this sample to Los Angeles County administrative data on traditional public schools' catchment zones as of 2002, which are relatively stable over time. Finally, I apply MABLE GeoCorr geographic crosswalks based on children's census tracts to generate a school district identifier for each respondent. About half of the (unweighted) observations resided within LAUSD boundaries (core-city subsample) and half were distributed across nearly fifty outlying districts (suburban subsample).

School Sorting as an Outcome

My primary outcome is a binary measure of *neighborhood-school decoupling*, which indicates whether an L.A.FANS child respondent was enrolled in her residentially-assigned public school based on census tract and catchment boundary data. L.A.FANS-provided data linked to state administrative data reveal whether each child attended a private school, a charter school, or a traditional public school. For children reported by L.A.FANS to attend a private or charter school in a given wave, catchment boundaries are not relevant, and I mark the child-year as "1", indicating their school and neighborhood are decoupled.

The remaining children in my analytic sample attended either a magnet school or a traditional public school. My data sources do not easily identify which students are magnet versus traditional public school attendees because many magnet schools share a campus with a traditional public school and therefore do not receive a unique school identification code from the state. However, the state's school directory does indicate whether a given school campus contains a co-

resident magnet school. For the subset of children who attend a public school containing a co-resident magnet program which they may or may not attend, if the primary caregiver of a child within this group indicated her child attended a magnet program during the wave in question, I mark the child as "1", indicating she is a magnet student and therefore enrolled in a school other than their traditional, residentially-assigned public school.

For all remaining children (i.e., those deemed to attend a traditional public school, I leverage ArcGIS to construct a spatial overlay of their census tracts' boundaries and the county's catchment boundaries (as of 2002) for either elementary, middle, or high schools depending on the child's age. If the child's census tract intersects her reported school's catchment boundaries during a given wave of data collection, then she is deemed to attend her locally-assigned school and marked "0." If, on the other hand, the child's census tract of residence does *not* intersect the catchment boundaries of the school she is reported to attend, then I assume she enrolled a non-assigned traditional public school (perhaps via an intra- or interdistrict transfer program) and mark her as a school-neighborhood decoupler ("1"). Because catchment boundaries may vary year-to-year and therefore introduce potential measurement error when determining whether the residentially-assigned school was selected within a given year., I run sensitivity checks that reclassify children who attended a traditional public school but whose public school catchment zones *do not* intersect their census tract of residence from decouplers to non-decouplers if their school enrollment was located with 1-, 2-, 3-, or 4-miles of their home census tract. These more conservative operationalizations of neighborhood-school decoupling generate similar results. See Appendix C for more details on the school sorting outcomes' construction.

Operationalizing Minority Avoidance in a Multiracial Metro

The three primary predictors posited by my theoretical framework are: (1) whether the child resides in the *suburbs* (versus the core city); (2) the child's *race/ethnicity* (white – the reference group, black, Latino/Hispanic, Asian/Pacific Islander, or multiracial/other; and (3) the *racial composition* of the local public schools whose catchment zones intersect the child's neighborhood (census tract) of residence. Predictors (1) and (2) are used to stratify the sample into four quadrants: racially disadvantaged child in the suburbs (versus core city) and racially advantaged child in the suburbs (versus core city). Assignment into the suburban versus core-city quadrants is determined based on whether the child's census tract is located within LAUSD boundaries (core-city) or outside of them (suburban). This district-based operationalization is not only parsimonious but also consistent with prior school-oriented sociological analyses and highly salient (Owens 2016). LAUSD has long served as an archetypal disadvantaged and underperforming school district. Perceptions of it likely shape how parents navigate residential and educational sorting processes.

Within the core-city and suburban categories, I cluster families into racially advantaged and disadvantaged strata. Although the minority avoidance literature traditionally employs a white-black binary, Los Angeles' multiracial composition calls for a more nuanced classification. I categorize all white and Asian children as advantaged racial groups and all black, Latino, or Other/Multiracial children as disadvantaged. This division reflects theoretical arguments that contemporary racial hierarchies operate on a continuum of "blackness" (Bell, Marquardt, and Berry 2014) and that the "model minority" myth may buoy perceptions of Asian Americans (Wong et al. 1998). Also note that in Los Angeles, Latinos far outnumber blacks and their presence may be more symbolically salient in the county's neighborhoods. Moreover, Asian Angelenos resemble whites more than blacks and Latinos in terms of socioeconomic status and neighborhood attainment (Sampson et al. 2017).

With the four subsamples specified, I generate a tract-level estimate of disadvantaged minority concentration within a child's catchment-assigned public school. Because L.A.FANS does not provide precise addresses of households' residential locations, I cannot definitively confirm the precise catchment zone in which they reside and thus which public school's racial demographics should be used. Thus, I construct a spatially-weighted average of the *percentage of students who are black or Latino* within all schools whose catchment zones intersect the child's census tract of residence based on data from 2000-2001 for wave 1 child-year observations and 2006-2007 for wave 2 child-year observations.

For descriptive results, I convert the percentage-based measure into a categorical variable with three values to facilitate interpretation. Low concentration is defined as local public school composition < 50% black or Latino, medium is 50 – 74.99%, and high is 75%+. These particular thresholds ensure sufficient child observations across the four subsample quadrants. Employing this categorical operationalization, rather than the linear operationalization I use in all multivariate models, generates substantively unchanged results, which are available upon request.

Child, Parent, and Household Controls

I supplement the key predictors described above with several potential child-, parent-, and household-level confounders. First, I create a set of age-based fixed effects reflecting whether a child is of elementary school age (5-10), middle/junior high age (11-13), or high school age (14- 17) at the time of data collection, given the likelihood that rates and drivers of neighborhood-school decoupling vary by age and school level. I also use categorical variables to control for child *sex* (reference: male), whether or not the primary caregiver is a *first-generation immigrant*, and the child's *household income (logged)*. The latter is wave-specific, encompassing all income sources reported by the head of household at wave 1 or 2. This estimate is standardized to year 1999 dollars and then logged.

For most missing income values, L.A.FANS provides estimated imputed values (Peterson et al. 2012).

I include two additional time-varying socio-demographic variables that are often absent from school sorting analyses, especially those drawn from administrative data sources: a binary measure of whether the child resides in a home that is *owned* (reference: rented), a common proxy for wealth, which may be especially important in predicting private chool enrollment and a set of categorical variables to gauge the primary caregiver's *educational attainment*. The latter variables indicate whether the primary caregiver reported having not completed any college (reference), some college, or a bachelor's degree at the time of data collection. I also include household structure proxies, including whether the primary caregiver is *married* (reference: single and/or cohabiting) and a continuous measure of the *number of children* in the household, given that household transportation resources are critical to attending non-assigned schools far from home, but they are likely strained among single-parent households with many children.

Spatial Control Variables

A common critique of minority avoidance studies is that the patterns they capture may reflect not racial prejudice or out-group hostility, per se, but rather perceived status differences (*racial proxy*), given that disadvantaged minority concentration is highly correlated with reduced financial resources, teacher quality, student achievement, and student safety (Lareau and Goyette 2014). What might appear to be race-based sorting may in fact be quality-based sorting. To address this issue, I control for a test score-based measure that is widely-disseminated via the *Los Angeles Times* and online resources – the *Similar Schools Ranking* – of the local public school to which the child was assigned. I also account for the possibility that class-based sorting underlies race-based sorting by including a control capturing the spatially-weighted average percentage of students qualifying for *free*

or reduced-price lunch for all public schools whose catchment zones intersect the child's census tract of residence. Beyond these two spatial controls drawn from California Department of Education data, I include a neighborhood-level proxy for local crime – the *three-year average homicide count (logged)* – procured from the *Los Angeles Times* and based on the Mapping L.A.-designated neighborhood, rather than census tract, in which the child's household was located at the time of data collection. All three of the spatial controls listed above are time-varying.

Another important concern that could generate biased estimates is that the choice set of plausible school options likely varies greatly across geographic areas within large metros. Spatial proximity is a core driver of which school options parents consider and choose (Corcoran 2018). Given that suburban neighborhoods with higher concentrations of proximate private and non-traditional public school options may also contain higher concentrations of black and Latino residents, what appears to be minority avoidance-based school sorting may merely reflect differences in parents' plausible school options. To account for this possibility, I include spatial fixed effects capturing which of the eight *county regions* in which the child's census tract is located. Over 90% of children attend public or private schools within their county region of residence. School districts are slightly more porous, with 86% of children attending a public or private school within their district's boundaries. Moreover, intraclass correlations based on unconditional hierarchical linear models suggest that only approximately 30% of the variation in public school racial composition resides within rather than between L.A. County school district. As a result, district fixed effects would likely obscure the effect generated by the key variable of interest. On the other hand, 60% of the variation in public school racial composition resides within rather than between county regions.

ANALYTIC STRATEGY

My multivariate analyses begin by predicting the binary outcome of whether a child attends a school other than their catchment-assigned option using logistic regression models. I estimate the equation below separately by sample quadrant (Equation 1):

$$log\left(\frac{pj}{1-pj}\right) = \beta_0 + \beta_1 x_{1j} + \beta_2 x_{2j} + \delta_{12} x_{2j} x_{1j} \ldots$$

p_j is the probability of a given child-year *j* entailing the child attending a non-assigned school, whether public or private. This outcome's log odds are predicted as a function of the child-, parent-, household-, and tract-level variables (x_{kj}) described above. My core predictor within each subsample is the tract-level estimate of the percentage of students who are Latino or black within the assigned catchment public school for every given child-year combination *j* (x_{1j}). Thus, the key parameter is β_1, the coefficient gauging the estimated effect of this racial composition on the log odds that a child attends a non-assigned school. A positive coefficient value would indicate that higher concentrations of disadvantaged minorities predict a higher likelihood of opt-out (minority avoidance); a negative value would suggest the opposite. To test Hypothesis #1 indicating that minority avoidance patterns are evident for the pooled sample of White and Asian children, I include a set of interaction terms, represented by $x_{2j}x_{1j}$, which multiplies the local public school disadvantaged minority estimate with a categorical variable indicating whether the child is in the advantaged (i.e., white or Asian) racial stratum. The key parameter here is represented by δ_{12}, the coefficient indicating whether higher concentrations of disadvantaged minorities in the local public school exerts a stronger effect on white and Asian children's likelihood of opting out of their catchment-assigned school than on black, Latino, and other/multiracial children from doing the same, as the minority avoidance argument would suggest. I test Hypothesis #2 regarding differences in minority avoidance patterns by core-city versus suburban residence by specifying the sample to

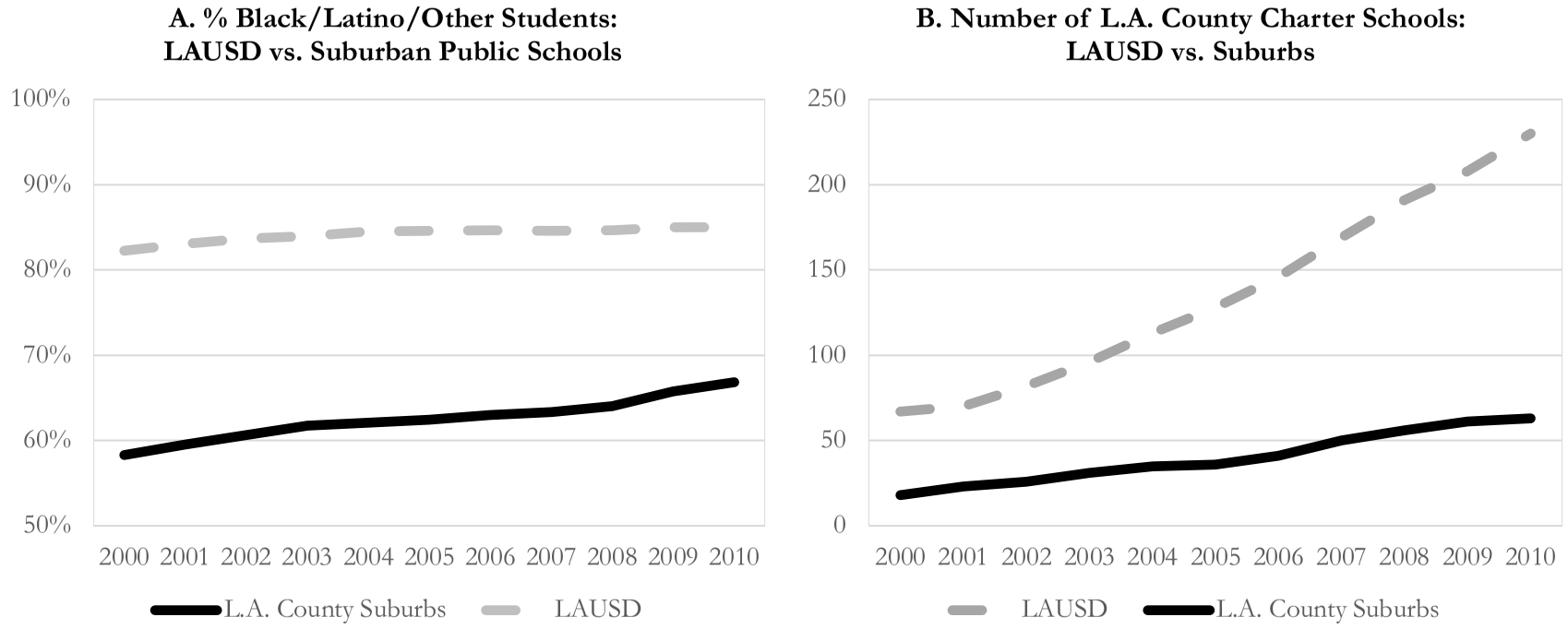
only include white and Asian children and by interacting the core disadvantaged minority student concentration predictor with a dummy variable indicating residence within a suburban (i.e., non-LAUSD) census tract. The coefficient on this interaction term indicates whether disadvantaged minority concentration exerts a stronger effect on school sorting patterns among suburban versus core-city White and Asian children. The logistic regression model relies on maximum likelihood estimation to generate coefficient estimates. Across all models, I cluster standard errors by the child's county region of residence.

DESCRIPTIVE RESULTS

A key assumption underlying my hypotheses is that suburbs, which were historically homogenous, are now very diverse. As a result, racially advantaged suburban families may be tempted to bypass their residentially-assigned schools. Educational administrative data on school demographics and school types during the 2000s are congruent with this possibility. Figure 3.1A shows that suburban public schools contained lower levels of disadvantaged minorities, on average, than did LAUSD schools throughout the timeframe. However, suburban schools' experienced steeper growth in this proportion. By the decade's end, the average suburban public school was nearly 70% Latino or black – far from the lily-white enclave of yesteryear. Thus, advantaged suburban parents with strong racial preferences were likely highly motivated to engage in race-based school sorting.

FIGURE 3.1

School Socio-demographics and Charter School Supply in LAUSD and Los Angeles County Suburban Districts



Notes

[a] Estimates in Panel A are based on annual California Academic Performance Index reports of students within each school who took standardized tests.

[b] Estimates in Panel B are based on annual California Department of Education school directories

However, these racial preferences would collide with a strong constraint: the suburbs' school opportunity structure. Several studies implicate charter school availability as a key driver of advantaged parents buffering their children from disadvantaged local public schools (Candipan 2020; Rich et al. 2019). Yet, as expected, suburban charter school options were remarkably scarce during the 2000s and barely exceeded fifty by 2010. LAUSD parents with similar racial preferences could access at least five times as many charter school options, which quintupled in number over the same period.

Lacking this common escape hatch, white and Asian suburban parents faced a dilemma. They could invest sizable sums in sending their children to a private school, or they could send their children to a non-assigned traditional public school. Table 3.1's descriptive statistics confirm that these two forms of neighborhood-school decoupling were quite common among advantaged suburban families within the analytic sample. The top rows of the table present school enrollment patterns, with estimates weighted to account for L.A.FANS's sampling and attrition procedures and disaggregated by subsample: advantaged suburban children (versus LAUSD), followed by disadvantaged minority suburban children (versus LAUSD).

TABLE 3.1
Descriptive Statistics: L.A.FANS Pooled Child Sample

Sample	Suburban White &		LAUSD White &		Suburban Non-White		LAUSD Non-White &	
Variables	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
School type								
Traditional Public, Catchment	0.61	0.49	0.25	0.43	0.66	0.47	0.61	0.49
Traditional Public, Non-Catchment	0.20	0.40	0.14	0.34	0.25	0.43	0.25	0.43
Magnet	0.02	0.14	0.03	0.16	0.01	0.11	0.03	0.18
Charter	0.02	0.12	0.15	0.36	0.00	0.06	0.07	0.25
Private	0.15	0.36	0.44	0.50	0.08	0.27	0.05	0.21
Child attributes								
Elementary school (ages 5 – 10)	0.43	0.50	0.53	0.50	0.48	0.50	0.52	0.50
Middle/junior high school (ages 11 – 13)	0.26	0.44	0.23	0.42	0.25	0.43	0.21	0.41
High school (ages 14 – 17)	0.31	0.46	0.23	0.42	0.27	0.44	0.27	0.44
Female	0.54	0.50	0.47	0.50	0.50	0.50	0.48	0.50
White	0.77	0.42	0.63	0.48				
Asian	0.23	0.42	0.37	0.48				
Black					0.14	0.34	0.11	0.31
Latino					0.65	0.48	0.85	0.36
Other/Multiracial					0.21	0.41	0.04	0.20
Parent/household attributes								
PCG first-generation immigrant	0.35	0.48	0.54	0.50	0.43	0.50	0.67	0.47
Household income (logged)	10.86	1.16	11.05	1.23	10.43	0.98	10.02	0.80
Homeowner	0.72	0.45	0.56	0.50	0.49	0.50	0.25	0.44
PCG no college	0.28	0.45	0.20	0.40	0.56	0.50	0.78	0.41
PCG completed some college	0.37	0.48	0.30	0.46	0.33	0.47	0.18	0.39
PCG bachelor's degree+	0.35	0.48	0.50	0.50	0.11	0.32	0.03	0.18
PCG married	0.81	0.40	0.83	0.38	0.66	0.47	0.62	0.48
Number of children in household	2.05	0.89	2.21	0.94	2.64	1.18	2.71	1.30
Neighborhood public school attributes								
% Latino/black in local schools	44.45	20.40	68.50	16.31	69.60	19.66	91.62	10.12
N households	270		143		602		718	
N children	348		183		807		965	
N child-years	409		226		955		1,179	

Notes
[a] All means are weighted to adjust for L.A.FANS sampling design and attrition (the latter for wave 2 observations only).
[b] 62% of child-year observations are based on wave 1 data, and 38% are based on wave 2 data.

Despite the widely-reported allure of the "idealized package," a surprisingly high percentage of advantaged suburban children (39%) attend a non-neighborhood public or private school – a figure very similar to the analogous PSID-based estimate that combines core-city and suburban children of all races (Candipan 2020). Note that as the school-level descriptives suggested, nearly 90% of white and Asian suburban neighborhood-school decouplers were enrolled in neither magnet nor charter schools – despite existing literature's heavy emphasis on these school types – but instead in a private or non-assigned traditional public school. Of the 20% enrolled in the latter, less than a third attended a school outside of their home district, and two-thirds attended a non-assigned traditional public school within their home district.

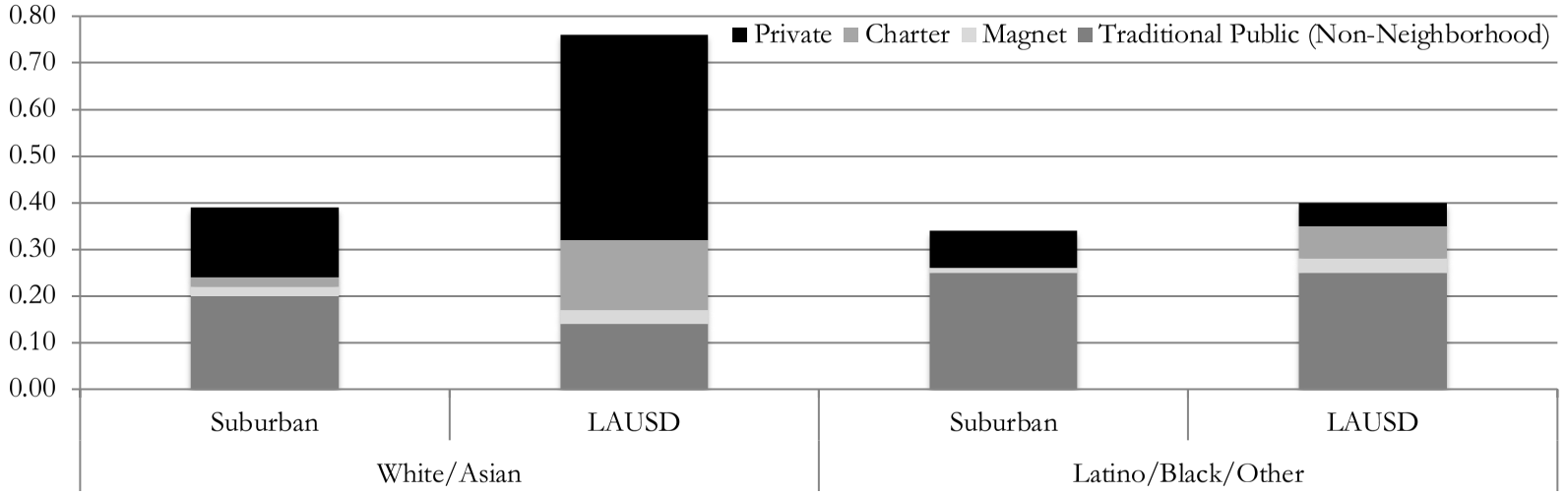
Shifting from the suburbs to the core city, white and Asian children residing within LAUSD are twice as likely to engage in neighborhood-school decoupling than are suburban children of the same racial background (a remarkable ~75%). This disparity reinforces minority avoidance studies' focus on decoupling within core-city districts. Compared to advantaged suburban decouplers, enrollment in charter and private schools is much more common among racially advantaged LAUSD children; enrollment in a traditional public school outside of their catchment boundaries is considerably less so.

Unlike the advantaged subgroups, disadvantaged minority children decoupling rates are lower overall – although school choice policies were ostensibly intended for them – and the levels do not vary sharply by suburban versus core-city residence. The descriptive racial and spatial disparities in neighborhood-school decoupling described above are visualized in Figure 3.2, Panel A. Panel B estimates the home-to-school network distance in road miles for children within each sample quadrant, stratified by non-neighborhood school type (i.e., traditional public, non-assigned, magnet/charter, and private). As I proposed in the theoretical framework section, suburban children are sent very far from home to attend public schools of choice (an average of 7 miles for non-

assigned traditional public schools and 11 miles for magnet or charter schools). These distances far exceed the traditional two-mile threshold employed by recent school sorting studies (Candipan 2020; Denice and Gross 2016).

FIGURE 3.2
Descriptive Patterns of School Enrollment

A. School Type by Race/Ethnicity and Core-City vs. Suburban Residence



B. Mean Home-to-School Network Distance (Miles), By Race/Ethnicity, Core-City vs. Suburban Residence, School Type

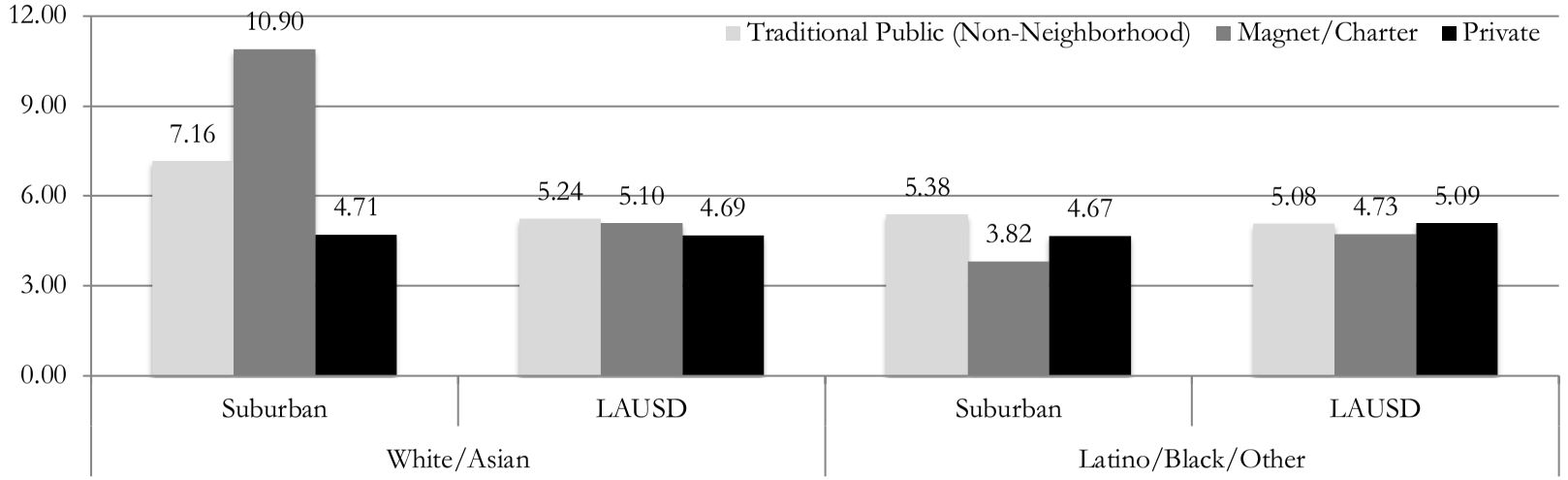
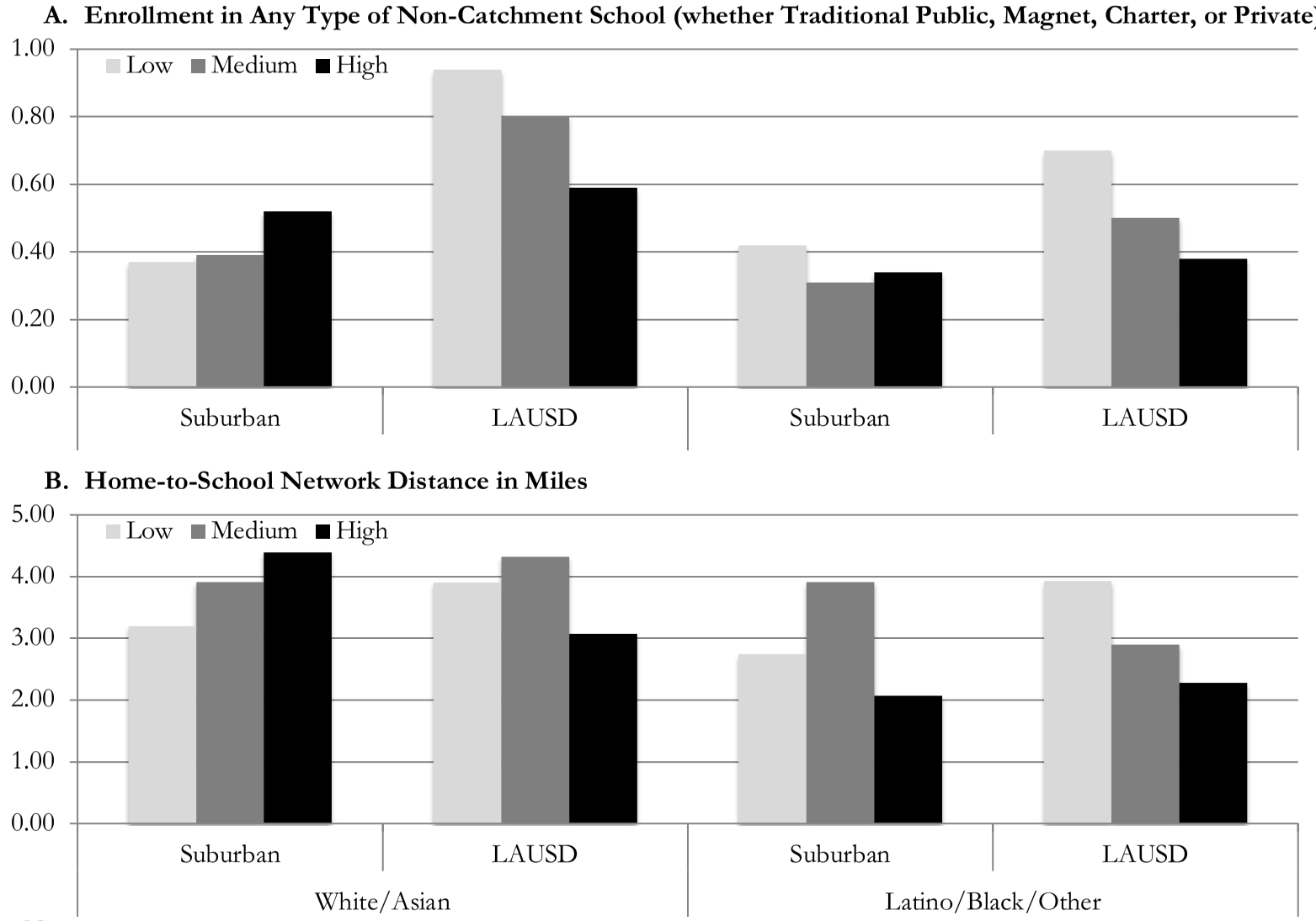


Figure 3.3, Panel A stratifies decoupling rates not only by sample quadrant but also by the theoretically central predictor: the concentration of disadvantaged minorities within respondents' local public schools. Despite the literature's heavy emphasis on minority avoidance within core-city districts, suburban advantaged children are the only ones who exhibit the predicted minority avoidance pattern based on descriptive data, which is congruent with Hypothesis #2. Panel B uses the same stratification but displays the average home-to-school network distance in miles for all children for whom the measure is available. Once again the predicted minority avoidance pattern is evident in the suburbs only; white and Asian suburban children are sent further from home, on average, when their neighborhoods include public schools with higher concentrations of Latinos and blacks, but the same is not true among white and Asian core-city children.

FIGURE 3.3

Descriptive Patterns of School Enrollment by Race, Core-City vs. Suburbs, and Disadvantaged Minority Concentration in Local Schools



Notes

[a] Low disadvantaged minority concentration is defined as < 50% Latino or black in local public schools; medium: 50 – 74.99%, high: 75%+

MULTIVARIATE MODELS

The descriptive results reported above are congruent with Hypotheses #1 and #2 but not sufficient to confirm that racially advantaged suburban families' school enrollment decisions reflect racial preferences rather than confounding factors. Multivariate models predicting the effects of children's local public school racial composition on these decisions are necessary. To this end, I first run four logistic regression models that predict the binary outcome of a child enrolling in a non-assigned school, whether public or private (Table 3.2). Model 1 emulates prior minority avoidance studies by predicting this outcome for all white and Asian children in the analytic sample, regardless of suburban versus core-city residence. The results provide a key data point supporting this literature's core proposition: a higher concentration of disadvantaged minorities in these racially advantaged children's local public schools significantly predicts a higher propensity to opt out of the residentially-assigned public school ($\beta = 0.025$, $p < 0.01$). This pattern holds when controlling for differences in families' plausible school choice sets and a wide range of covariates – including household income, homeownership, and whether the primary caregiver holds a bachelor's degree. The latter exerts the expected positive effect on neighborhood-school decoupling. The estimated magnitude of the minority avoidance effect is visualized in Figure 3.4, Panel A, which shows that a 20 percentage point increase in local public schools' disadvantaged minority composition is associated with a 10 percentage point increase in the likelihood of a white or Asian child attending a non-assigned school, whether public or private.

TABLE 3.2

Effects of Child, Parent, Household, Local School Characteristics on Probability of Attending a Non-Catchment School, Logit Models

Race/Ethnic Group	Model 1: White/Asian		Model 2: Latino/Black/Other		Model 3: All Races		Model 4: White/Asian		Model 5: White/Asian		Model 6: White/Asian	
Suburban vs. Core-City	*Pooled*		*Pooled*		*Pooled*		*Suburban Only*		*LAUSD Only*		*Pooled*	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
% Latino/black in local schools	0.025**	0.006	0.003	0.010	0.004	0.008	0.018**	0.006	-0.008	0.015	-0.038**	0.013
% Latino/black X White/Asian					0.016**	0.006						
% Latino/black X Suburban											0.057**	0.015
Suburban (non-LAUSD)											-5.377**	0.963
Child attributes												
White or Asian					-0.673	0.447						
Female	-0.277	0.190	-0.081	0.114	-0.123	0.076	-0.241	0.242	-0.725**	0.260	-0.322	0.189
Parent/household attributes												
PCG first generation immigrant	-0.332	0.178	-0.748**	0.213	-	0.170	-0.304	0.352	-0.041	0.267	-0.348	0.236
Household income (log)	0.132	0.091	-0.036	0.071	0.061	0.074	0.014	0.041	0.424**	0.114	0.099	0.071
Homeowner	1.115	0.522	0.234	0.121	0.411*	0.160	0.928	0.543	1.613**	0.437	0.990*	0.479
PCG completed some college	0.556	0.559	-0.053	0.243	0.079	0.169	0.532	0.566	0.453	1.062	0.514	0.543
PCG Bachelor's degree+	1.182*	0.519	0.667**	0.189	0.858**	0.173	1.362**	0.476	0.460	0.676	1.218**	0.457
PCG marital status: married	0.212	0.433	-0.390**	0.052	-	0.096	0.150	0.516	0.720	0.676	0.200	0.441
Number of children in hhld.	-0.011	0.120	0.006	0.044	0.025	0.021	-0.046	0.120	0.225	0.440	-0.026	0.107
Constant	-5.237**	1.289	-0.642	1.089	-2.236	1.182	-	0.379	-3.667	2.170	0.904	1.615
Household *N*	409		1,283		1,687		270		143		409	
Child *N*	526		1,726		2,252		348		183		526	
Child-Year *N*	635		2,134		2,769		409		226		635	

Notes

[a] All models contain the following fixed effects: county region of residence, wave of data collection (2006-08) and school level (middle/junior high, high).

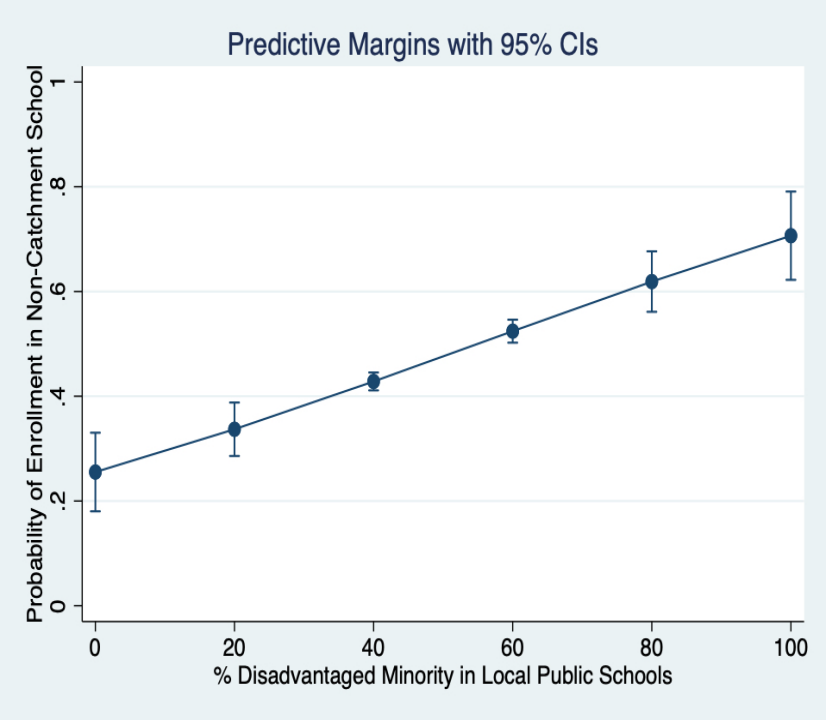
[b] Standard errors are clustered by county region of residence.

[c] *$p < .05$, **$p < .01$ (two-tailed test).

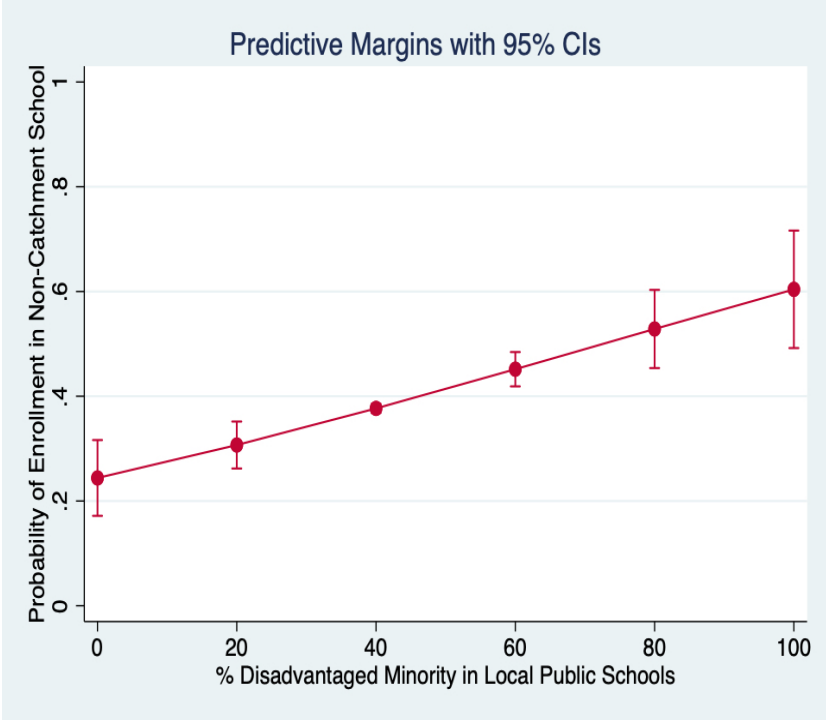
FIGURE 3.4

Estimated Marginal Effect of Disadvantaged Minority Concentration in Local Public Schools on Non-Catchment School Enrollment

A. All White & Asian Children (Child-Year *N* = 633)



B. Suburban White & Asian Children Only (Child-Year *N* = 409)



Notes

[a] Panel A predicted probabilities are based on Table 3.2, Model 1.

[b] Panel B predicted probabilities are based on Table 3.2, Model 4.

As a falsification check, I run an identical model for the pooled racially *disadvantaged* sample. If the percentage of Latino and black students in local public schools also predicts neighborhood-school decoupling for this group, then the minority avoidance effects evinced by Model 1 are likely spurious. However, a clear minority avoidance pattern is *not* evident within this group. Model 3 goes a step further in ensuring that Model 1's results are not spurious by pooling children of all racial groups and residential locations together and including an interaction of White/Asian racial background with local public school disadvantaged minority concentration. This interaction should be significant and positive, indicating that advantaged racial groups' school sorting patterns are more sensitive to concentrations of disadvantaged students in the local public school than are disadvantaged racial groups. Indeed this is the case ($\beta = 0.016$, $p < 0.01$). The three models taken together provide strong support in favor of Hypothesis #1.

The next model (#4) deviates from extant literature by examining minority avoidance school enrollment patterns only among a rarely considered group: racially advantaged suburban, rather than core-city, parents. Hypothesis #2 implies that these parents engage in minority avoidance, as other studies have argued core-city parents do. Model 4 reinforces this contention. Higher concentrations of disadvantaged minorities in advantaged suburban children's local public school predict them opting out of the school ($\beta = 0.018$, $p < 0.01$), Figure 3.4 Panel B visualizes the estimated magnitude of the marginal effect of disadvantaged minority concentration on racially advantaged suburbanites' propensity to opt out, which is nearly identical to the marginal effect estimated using an identical model based on the pooled (i.e., suburban and core-city) racially advantaged sample.

Importantly, the same model specification when applied to the subsample traditionally scrutinized in the literature – racially advantaged core-city families districts – shows no evidence of minority avoidance (Model 5). In fact, this model generates a negative, though nonsignificant, coefficient on local public school disadvantaged minority concentration. Model 6 provides the most

rigorous test of suburban versus core-city disparities in minority avoidance-based school enrollment patterns by pooling all white and Asian children together and interacting an indicator for suburban (i.e. non-LAUSD) residence with the local public school percentage Latino or black variable. Congruent with Hypothesis #2, the interaction is positive and statistically significant ($\beta = 0.057$, $p < 0.01$), suggesting that minority avoidance patterns of school enrollment are stronger among racially advantaged suburbanites compared to similarly situated core-city families.

A skeptic could counter that advantaged suburban families opt out of diverse local public schools not because of their racial composition, per se, but because of correlated factors, such as their socioeconomic composition, test score-based performance measures, and neighborhood crime rates. Relatively few studies directly examine this racial proxy hypothesis due to data constraints, but I leverage administrative data to directly control for these three potentially confounding explanations of minority avoidance in general (Hypothesis #1), and particularly in the suburbs (Hypothesis #2).

Table 3.3, Models 1 – 3 bear on Hypothesis #1 by replicating Table 3.2, Model 3 which pools all racial groups together and includes an interaction term testing the heterogeneous effects of local public disadvantaged minority concentration by racial stratum, and sequentially adding in the three racial proxy factors, interacted with the white/Asian dummy variable, one at a time. Partial output for these models shows that across each of these three models, the new interaction terms are not significant but the core interaction term – white/Asian X % Latino/black in local public schools – remains positive and statistically significant ($\beta = 0.02$, $p < 0.01$).

TABLE 3.3

Effects of Neighborhood Characteristics on Non-Catchment School Enrollment with Racial Proxies Included, Logit Models (Partial Output)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Sample	**All Children (Child-Year *N* = 2,769)**						**All White & Asian Children (Child-Year *N* = 635)**					
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
White or Asian Child	-0.618	0.393	-0.739	0.411	-0.669	0.420						
Suburban (i.e., non-LAUSD)							-4.670**	0.643	-2.672	1.484	-5.365**	1.102
Local Public School Racial Comp.												
% Latino/black	0.011	0.014	0.002	0.005	0.004	0.006	-0.029	0.020	-0.038**	0.011	-0.038	0.019
% Lat/black X White/Asian	0.015**	0.006	0.017**	0.006	0.016**	0.006						
% Lat/black X Suburban							0.067*	0.027	0.055**	0.011	0.061**	0.020
Local Public School SES Composition												
% FRPL eligible	-0.008	0.010					-0.002	0.016				
% FRPL X White/Asian	0.001	0.004										
% Latino/black X Suburban							-0.020	0.021				
Local Public School Value-Added												
Similar Score Ranking			-0.014	0.057					0.225	0.163		
Similar Score X White/Asian			-0.028	0.071								
Similar Score X Suburban									-0.417*	0.204		
Neighborhood Crime												
Homicides (3-year avg. logged)					0.135	0.074					-0.172	0.628
Homicides X White/Asian					0.047	0.066						
Homicides X Suburban											-0.159	0.631

Notes

[a] All models contain the following fixed effects: county region of residence and wave of data collection (2006-08) and school level (middle/junior high, high).

[b] Standard errors are clustered by county region of residence.

[c] Covariates included in the above models, other than those displayed, are identical to Table 3.2's models. Full model output is available upon request.

[d] *$p < .05$, **$p < .01$ (two-tailed test).

Models 4 – 6 replicate Table 3.2, Model 6 which is specified only on white and Asian children. The key interaction term is suburban residence X % Latino/black in local public schools, but the three racial proxy factors, interacted with the white/Asian dummy variable, are sequentially added in one at a time. Here, too, the key interaction term – suburban X Latino/black – remains positive and significant ($\beta = 0.06 – 0.07$, $p < 0.01$) – despite the inclusion of the racial proxy interactions, strengthening support for Hypothesis #2.

The key parameters discussed thus far are interaction terms included in logistic regression models. However, recent work suggests seemingly significant interaction effects generated by logistic regression models should be interpreted cautiously (Mize 2019). Thus, I replicate all of Table 3.3's models but use a linear probability (i.e., OLS) specification, which is not subject to the same concerns. All of Table 3.4's models generate significant ($p < 0.05$) or marginally significant ($p < 0.10$) coefficients on the interaction terms central to Hypothesis #1 (Models 1 – 3) and to Hypothesis #2 (Models 4 – 6), even when including racial proxy controls.

TABLE 3.4

Effects of Neighborhood Characteristics on Non-Catchment School Enrollment with Racial Proxies, OLS Models (Partial Output)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Sample	**All Children (Child-Year *N* = 2,769)**						**All White & Asian Children (Child-Year *N* = 635)**					
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
White or Asian Child	-0.142	0.087	-0.170	0.092	-0.153	0.091						
Suburban (i.e., non-LAUSD)							-0.626**	0.132	-0.351	0.193	-0.736**	0.184
Local Public School Racial Comp.												
% Latino/black	0.002	0.003	0.000	0.001	0.001	0.001	-0.002	0.003	-0.004	0.002	-0.004	0.003
% Latino/black X White/Asian	0.003*	0.001	0.004*	0.001	0.004*	0.001						
% Latino/black X Suburban							0.010+	0.005	0.008*	0.002	0.009*	0.004
Local Public School SES Composition												
% FRPL eligible	-0.002	0.002					-0.001	0.003				
% FRPL eligible X White/Asian	0.000	0.001										
% Latino/black X Suburban							-0.004	0.003				
Local Public School Value-Added												
Similar Score Ranking			-0.003	0.012					0.032	0.016		
Similar Score X White/Asian			-0.006	0.015								
Similar Score X Suburban									-0.070*	0.028		
Neighborhood Crime												
Homicides (3-year avg. logged)					0.029	0.015					-0.005	0.098
Homicides X White/Asian					0.010	0.014						
Homicides X Suburban											-0.059	0.102

Notes

[a] All models contain the following fixed effects: county region of residence and wave of data collection (2006-08) and school level (middle/junior high, high).

[b] Standard errors are clustered by county region of residence.

[c] Covariates included in the above models, other than those displayed, are identical to Table 3.2's models. Full model output is available upon request.

[d] +$p < .10$, *$p < .05$, **$p < .01$ (two-tailed test).

SUPPLEMENTARY ANALYSES

To further assess whether racial bias truly undergirds white and Asian public school students' decoupling behaviors, in general, and particularly those residing within the suburbs, I conduct a final set of descriptive analyses that compares the racial composition and value-added proxy for school quality (the California Department of Education's Similar Schools Ranking) of the school *actually* attended by neighborhood-school decouplers to the same features of their catchment-assigned public school. Because these data are only available for public school and not private school attendees, they paint only a partial picture of potential motives for neighborhood-school decoupling.

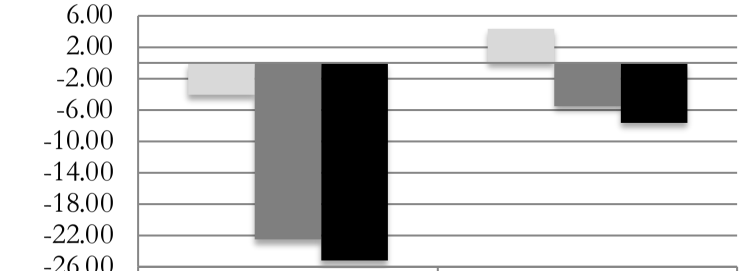
Figure 3.5A shows that White and Asian children who reside within neighborhoods of medium or high disadvantaged minority concentrations and attend a non-assigned public school reduce their exposure to black and Latino peers by nearly 25 percentage points, on average. The analogous drop is about a quarter of the magnitude for black and Latino children who reside within demographically similar neighborhoods. Shifting from racial composition to test score-based value-added measures Panel B, white and Asian children residing within high disadvantaged minority concentration neighborhoods who opt for a non-assigned public option enter schools that rank a decile and a half lower than their assigned school on the Similar Schools Ranking. Black, Latino, and other children see only minor differences. I interpret this supplementary descriptive evidence as providing additional support for racially-motivated school sorting patterns among racially advantaged families (Hypothesis #1).

FIGURE 3.5

Difference in Selected Characteristics of Enrolled Public School vs. Assigned Public Catchment School for Non-Catchment Public Attendees, by Local Public Schools' Concentration of Disadvantaged Minorities

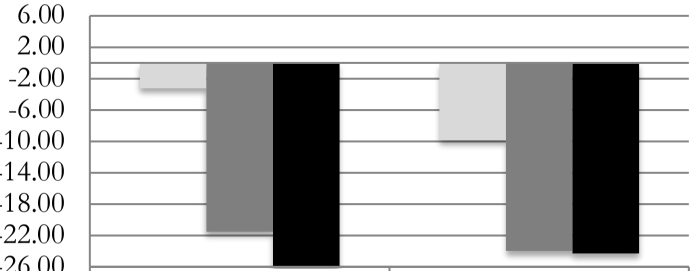
C. Mean Difference in Percentage of Students who are Black or Latino (Selected – Assigned)

Public School Attendees of All Races



	White/Asian	Latino/Black/Other
Low	-4.02	4.36
Medium	-22.51	-5.54
High	-25.22	-7.68

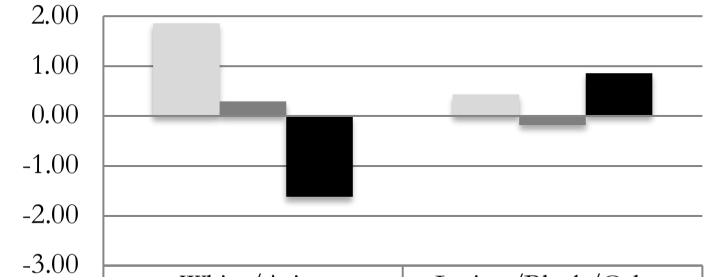
White & Asian Public School Attendees



	Non-LAUSD	LAUSD
Low	-3.24	-9.82
Medium	-21.53	-24.01
High	-25.98	-24.26

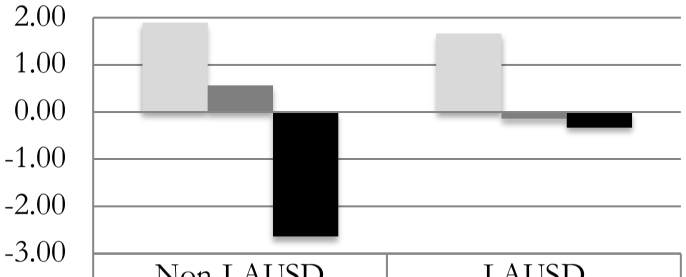
D. Mean Difference in Similar Schools Ranking (Selected – Assigned)

Public School Attendees of All Races



	White/Asian	Latino/Black/Other
Low	1.86	0.43
Medium	0.29	-0.18
High	-1.62	0.86

White & Asian Public School Attendees



	Non-LAUSD	LAUSD
Low	1.89	1.66
Medium	0.57	-0.14
High	-2.63	-0.33

Do the descriptive school sorting patterns diverge not only between races but also within the racially advantaged stratum on the basis of suburban versus core-city residence? Yes, but perhaps less strikingly. Figure 3.5B shows that White and Asian children who reside within suburban neighborhoods of medium or high disadvantaged minority concentrations and attend a non-assigned public school reduce their exposure to black and Latino peers by nearly 25 percentage point, but the analogous figure is nearly identical among LAUSD white and Asian children residing near racially similar public schools. However, suburban white and Asian decouplers who reside near the most racially disadvantaged schools sacrifice trade off an average of over 2.5 deciles in the school value-added distribution in order to gain exposure to more advantaged school racial composition; core-city white and Asian decouplers in racially similar neighborhoods sacrifice virtually no value-added quality differences, on average, to achieve similar school racial composition changes. Thus, suburban whites and Asians decouplers appear to pay a steeper price for more advantaged racial school settings.

A set of multivariate Heckman-adjusted models that more rigorously examine race and suburban residence disparities in the two school outcomes above, while accounting for non-random selection into public school decoupling (the selection equation uses religious congregation membership variable as the exclusion restriction; results are available upon request), are presented in Table 3.5. Model 1 suggests that as catchment-assigned public school disadvantaged minority concentration increases, the degree of reduction in Latino and black composition in a Latino, black, and other/multiracial decoupler's school of attendance compared to her assigned school is greater. However, congruent with Hypothesis #1, this negative association is even stronger among whites and Asians than it is among Latinos and blacks, though the association is only marginally significant ($\beta = -0.27, p < 0.10$). Moreover, Model 2 reveals that, as catchment-assigned public school disadvantaged minority concentration increases, the predicted value-added ranking of Latino, black,

and other/multiracial decoupling children's school of attendance relative to their assigned school increases. However, the interaction term suggests the same association is significant and negative among whites and Asian (β = -0.11, $p < 0.01$), suggesting a racial composition-value-added trade-off for this group. Model 3 does not reveal suburban versus core-city heterogeneity in the effect of assigned public school disadvantaged minority concentration on white and Asian children's reduced exposure to Latino and black students in their enrolled schools. However, Model 4 suggests the negative effect of assigned public school disadvantaged minority concentration on white and Asian children's selected versus assigned school difference in value-added rankings is significantly stronger in magnitude (β = -0.10, $p < 0.01$) among suburbanites than among core-city residents.

TABLE 3.5

Effects of Child, Parent, Household, and Local School Characteristics on School of Enrollment Characteristics, Heckman-Adjusted

Outcome	Model 1: % Latino/Black in Enrolled vs. Assigned Public School		Model 2: Similar School Ranking of Enrolled vs. Assigned School		Model 3: % Latino/Black in Enrolled vs. Assigned Public School		Model 4: Similar School Ranking of Enrolled vs. Assigned School	
Sample	**All Racial Groups**				**White & Asian Children Only**			
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
% Latino/black in local schools	-0.175*	0.079	0.052**	0.011	-0.377+	0.205	0.026	0.020
% Latino/black X White/Asian	-0.274+	0.156	-0.110**	0.025				
% Latino/black X Suburban					0.031	0.207	-0.099**	0.035
Suburban residence					-1.561	12.529	5.892**	2.195
Child attributes								
White or Asian	4.297	8.458	6.158**	1.536				
Female	-1.443	1.422	0.390	0.233	1.635	2.705	0.692+	0.401
Parent/household attributes								
PCG first generation immigrant	4.221+	2.384	0.011	0.398	-5.122	3.432	1.161+	0.693
Household income (log)	-2.561**	0.905	0.132	0.150	-2.272	1.519	0.168	0.295
Homeowner	-2.143	4.218	0.354	0.434	3.054	5.199	1.510**	0.559
PCG completed some college	0.552	4.186	0.631**	0.227	12.291+	7.336	0.265	0.582
PCG Bachelor's degree+	0.581	6.003	0.769+	0.418	9.598+	4.545	0.589	0.541
PCG marital status: married	-4.434	3.194	-0.522+	0.298	-8.287+	4.549	-2.188**	0.703
Number of children in hhld.	0.305	0.541	0.069	0.146	-4.938	3.243	0.488	0.697
Constant	34.981**	8.159	-4.636+	2.524	38.484	21.491	-2.203	5.419
Selected Child-Year *N*	754		734		153		151	
Nonselected Child-Year *N*	421		441		199		201	

Notes

[a] Coefficients for selection equations for all four Heckman-adjusted models are available upon request.

[b] Only child-year observations in which the child attended a *non-catchment public school* (including magnets, charters) are included in Models 2, 3, 5, and 6.

[c] All models contain the following fixed effects: wave of data collection (2006-08) and school level (middle/junior high, high).

[d] Standard errors are clustered by county region of residence.

[e] $+p < .10$, $*p < .05$, $**p < .01$ (two-tailed test).

DISCUSSION & CONCLUSION

Homogenous suburban public schools have long served as the linchpin of American segregation, but advantaged families who fled core cities to access them increasingly see black and brown children in their local schools. How do they respond? A small but growing literature examines minority avoidance-driven residential flows between suburbs but few, if any, probe families' educational decisions in the suburbs. I propose a resolution to the puzzle of enduring racial preferences among racially advantaged parents within racially diverse suburbs that lack a robust set of alternative school options: white and Asian suburban families living amongst Latino and black children enact their racial preferences by commuting long distances to send their children to non-assigned schools. Logistic regression models predicting school enrollment outcomes for over 2,000 Los Angeles County children during the 2000s reinforce my core argument. All else equal, higher concentrations of Latino and black students in residentially-assigned public schools spur white and Asian families, but not Latino, black, and other/multiracial families to opt out. Perhaps surprisingly, this minority avoidance school enrollment pattern is stronger among suburban families who lack easy access to alternative school options than it is among core-city families who have received disproportionate attention in the literature on minority avoidance and school segregation.

These findings have implications for research on residential and educational segregation processes and stratification, writ large. The sociology literature has traditionally focused on two key mechanisms reproducing segregation: (1) residential flows from diverse urban to homogenous suburban communities, enabling advantaged parents to bundle highly-resourced neighborhoods and schools ("white flight") and (2) educational flows of advantaged core-city dwellers from traditional public schools to charter, magnet, and private schools ("minority avoidance"). Future studies should probe the third path I propose, one in which diversifying suburbs and sparse non-traditional school options spur advantaged suburban parents to seek more advantaged, even if poorer-performing,

traditional public schools outside of their catchment zones. Simulations that estimate aggregate neighborhood and school segregation levels under plausible assumptions regarding the frequency of each of these three paths would clarify the complex causes of spatial inequality.

Shifting from segregation's causes to consequences, contextual effects scholars should disentangle the effects of neighborhood and school socio-demographic compositions on children's skill and status trajectories. Neighborhood effects scholars have long assumed that schools and neighborhoods tightly overlap in socio-demographic properties, but this study suggests this assumption may no longer hold. If the "neighborhood-school" sociodemographic gap is indeed increasing (Bischoff and Tach 2020; Candipan 2019), even in the suburbs, and if school peer effects are stronger than are neighborhood peer effects (Wodtke and Parbst 2017), then recent increases in suburbs' racial integration may ultimately accrue minimal benefits to local children.

This study also suggests the broader stratification literature should rethink the common conceptualization of opportunity structures as fixed and rigid. An important educational opportunity structure – a family's plausible choice set of schools – appears more malleable than prior studies portray, especially for highly advantaged parents. These families do not need a high concentration of non-traditional public schools to exit their residentially-assigned public school. Perhaps their transportation and financial resources, as well as their institutional navigation skills, enable them to access schools would typically not be considered to be in their choice set (e.g., schools nearly ten miles away from their homes). Thus, policies aimed at merely constraining the supply of charter, magnet, and private schools are unlikely to root out minority avoidance behaviors. Future research on other choice-making processes with implications for inequality (e.g., job and housing searches) should consider that highly advantaged and highly skilled individuals may find ways to reshape the opportunity structure to their liking. Studies that explicitly examine which types of individuals select

options outside of their traditionally-conceived choice sets, as well as why and how they do so, would valuably enrich social stratification research.

I note several important limitations of this study. Although Los Angeles County is remarkably large, populous, and diverse, it is only one ecology examined during one period. Whether the findings here, based on a relatively small sample size, generalize to other parts of the country during other eras is unknown. Future studies would ideally leverage administrative data on core-city *and* suburban children who attend both private and public schools and track their residential histories. Qualitative data on parents' school enrollment preferences and decision-making processes, would further illuminate whether their decisions reflect preferences driven by racial bias or racial proxy.

Large-scale multilevel datasets of the sort described above, especially if longitudinally tracked over the entirety of children's K-12 careers, could also help generate more plausibly causal effects of disadvantaged minority proximity on advantaged children's school enrollment patterns than my study could. I attempted to mitigate validity concerns by incorporating a wider set of controls than many similar studies have – including local schools' socioeconomic composition, test score-based quality measure of local school, and crime rates – and by accounting for spatial differences in the plausible school choice sets available. However, the cross-sectional nature of my data constrains causal interpretation. Longitudinal data would permit inclusion of household-level fixed effects; temporal changes in local public schools' demographics could be leveraged to determine whether these shifts predict child opt-out, net of time invariant household characteristics. Another strategy might entail using spatial discontinuities to determine whether similarly situated white and Asian households on a more disadvantaged side of a catchment boundary than those on the other are more likely to opt out of their local school.

Despite these limitations, this study documents an emerging mechanism of school segregation in the suburbs that most prior studies have missed. Because suburban schools educate a growing plurality of the nation's school children, understanding stratification processes here is particularly important. Optimism that the suburbs' increasing residential diversity would spill into increasing educational diversity must be tempered by evidence of racially-stratified school sorting processes that prevent meaningful integration. That suburban minority avoidance appears to operate despite nontrivial school supply constraints suggest the minority avoidance preferences may be even stronger than we expected, and the behavior may be particularly difficult to track and reduce. Although researchers and policymakers often blame private, magnet, and charter schools for exacerbating race-based school sorting, this study provides a sobering counterpoint: the minority avoidance impulse is so strong that advantaged parents may enact their racial preferences even in the absence of easily accessible schools of choice.

4

School Sorting as a Stratification Process

The recent transformation of urban public school enrollment from a residence-based to choice-oriented system has reinvigorated sociological research on the patterns and drivers of school sorting above and beyond neighborhood sorting. This literature has primarily employed an "out-group" avoidance lens, documenting how advantaged and especially white parents leverage school choice options – whether charter, magnet, or private schools – to keep their children buffered from large and growing concentrations of disadvantaged minorities in their local public schools (Bischoff and Tach 2018, 2020; Candipan 2019; Saporito and Sohoni 2006). These dynamics temper optimism regarding recent declines in neighborhood segregation (Rich et al. 2019) and fuel concerns that, sixty years after *Brown vs. Board of Education*, individual choices have supplanted governmental policies as drivers of school segregation (Reardon and Owens 2014).

However, as the white proportion of American school-aged children winnows, supplementing minority avoidance accounts of school sorting with other theoretical frameworks that account for school sorting patterns among white and non-white families alike, is crucial. In other words, sociological research should expand to consider socially-stratified patterns of school sorting across families of *all* race and class backgrounds, attending *all* types of schools. Studies taking a holistic view are scarce; most hone in exclusively on the most – or occasionally least (e.g., Rhodes and DeLuca 2014) – advantaged urban families, rather than the full distribution simultaneously. The few that do often rely on data drawn only from core-city public school districts (Welsh and Swain 2020), to the exclusion of private schools and suburban school districts. As a result, validity and

generalizability are compromised, and heterogeneity insufficiently examined. In short, contemporary school sorting as a social stratification process remains undertheorized and undertested.

This omission is important because growing shares of American of all race and class backgrounds now opt out of their residentially-assigned public school, reaching nearly 50% in some large American cities (Cullen, Jacob, and Levitt 2005). Recent evidence also suggests that schools stratify children's life chances (Jennings et al. 2015), even among children residing within the same district (Deming 2014; Lloyd and Schachner 2020), and that private, magnet, and/or charter schools may exert causal boosts to children's cognitive development and long-term trajectories (Berends 2015; Figlio and Stone 2012; Wang et al. 2018), especially for disadvantaged students residing in core-city neighborhoods (CREDO 2015; Goldhaber and Eide 2002). Thus, just as understanding which families end up in which neighborhoods has emerged a central inquiry of stratification research, revealing which children enroll in which is crucial to building our sociological knowledge of how residential and educational conditions independently and interactively perpetuate inequality today.

Drawing on the comparatively well-developed residential sorting literature – also known as the neighborhood attainment paradigm – I propose an analogous *school attainment* account of school sorting whereby families seek to place their children in the highest-prestige K-12 schools they can access, which in the contemporary urban context are typically schools of choice – whether a a private, charter, or magnet school. However, structural constraints stratify families' abilities to translate these preferences into reality. For example, a dearth of geographically-proximate alternative school options within segregated neighborhoods, formidable resource barriers (e.g., private school tuition, transportation costs), and institutional gatekeepers' racial biases may stymie low-income and disadvantaged minorities' school enrollment objectives.

Additional leverage in illuminating socially-stratified school enrollment patterns may be gained by focusing not only on race- and income-based constraints but also parental education- and skill-stratified preferences. Drawing on the burgeoning "concerted cultivation" and skill-based parenting literatures to inform its predictions, this *intergenerational reproduction* account assumes that financial resources and racial bias are far less directly relevant to school enrollment processes than they are to the housing market. Most alternative school options impose minimal financial costs, and even private schools often offer financial aid; public transit renders transportation a meaningful but not insurmountable hurdle in many cities. Moreover, charter and magnet schools typically employ randomization to allocate spots, potentially neutralizing institutional gatekeepers' biases.

With structural constraints reduced, the roles of parental education and skills may be amplified. Highly educated and highly skilled parents of all racial groups and income levels disproportionately enroll their children in extracurriculars (Lareau 2011; Weininger, Lareau, and Conley 2015), engage in a wide range of activities linked to children's cognitive and socioemotional development (Anger and Heineck 2010; Bornstein et al. 1998; Sastry and Pebley 2010), and sort into high-status neighborhoods with high-scoring public schools (Schachner and Sampson 2020). It follows that the most educated and cognitively/socioemotionally skilled parents may also disproportionately optimize for their children's development by selecting a school choice option for their children.

I leverage school enrollment patterns in Los Angeles County during the 2000s to examine these two explanations of socially-stratified school sorting. In this temporal and geographic context, the already vast and varied set of alternative school options was growing and school enrollment rules were liberalizing. Yet only a quarter of school-aged children were white, rendering the minority avoidance lens insufficient to explain socially-stratified school enrollment patterns. I develop logistic regression models predicting the probability a child enrolled in a school of choice (i.e., magnet,

charter, or private school) versus a traditional public school. When applied to data on over 1,000 elementary school-aged Angelenos drawn from the Los Angeles Family and Neighborhood Survey and linked to administrative sources, the models provide modest support for the school attainment account but strong support for the intergenerational reproduction account of school sorting. Children of parents with higher cognitive skills and a lower likelihood of depression are much more likely to access a school of choice, even when comparing families residing within the same neighborhood. Taken together, the analyses cast contemporary school choice as another case of *skill-based contextual sorting* (Schachner and Sampson 2020) that potentially exacerbates the intergenerational transmission of skills and status.

SCHOOL CHOICE: EXPANDING OPTIONS AND ENDURING SEGREGATION

The historically ubiquitous catchment-based model of school assignment, whereby geographic attendance zones determine which children attend which schools, long ensured the vast majority of American children attended their residentially-assigned local public school. However, beginning in the 1990s, school reform efforts, reflecting market-based logics and predicated on choice and information, have vastly expanded the proportion of parents with the legal and practical option to decouple their child's school from their neighborhood (Berends 2015; Berends et al. 2019; Hoxby 2003; Orfield and Frankenberg 2013). These market-oriented reforms consist of some combination of intra- and inter-district transfer programs, private school vouchers, expansion of magnet and charter schools, and access to detailed school performance data. Proponents claimed expanded choice would diminish race and class-based gaps in access to high-quality schools by facilitating low-income, minority families' exit from poorly performing, under-resourced schools that they were forced to attend due to the catchment-based assignment system. Many also believed competitive pressures resulting from the redistribution of financial resources that come with these students to

higher-performing schools would further bolster this objective (Archbald 2004; Gill et al. 2007; Le Grand 2007; Rich and Jennings 2015).

Widely cited figures suggest that through the 2000s, approximately 70-80% of American school children attended their local public school, with the rate reducing to 60-70% during the 2010s (Grady and Bielick 2010; Snyder 2019). Private schools enrolled about 10% of elementary-aged children during the two decades (Murnane and Reardon 2018), while public charter and magnet schools operating outside of the traditional catchment area model each enrolled approximately 5% of the same population (Snyder 2019). However, these national figures obscure substantial variation in decoupling patterns across geographic contexts. In populous metropolitan areas – such as Boston, New York City, and Chicago – "neighborhood-school decoupling" via private and public schools is considerably more common, with overall rates reaching 40 – 50% of all children (Cullen et al. 2005; Johnston 2015; Mader, Hemphill, and Abbas 2018).

Revealing not only the rates of, but the drivers underlying, school choice can illuminate our sociological understanding of how families, schools, and neighborhoods interact to reproduce inequality. However, the literature examining school and neighborhood selection processes *simultaneously* pales in comparison to the bodies of work on neighborhood attainment and school selection, *separately* (Lareau and Goyette 2014). A modest but growing body of work on neighborhood-school decoupling rectifies this gap and highlights racial dynamics in shaping school sorting patterns. These studies typically employ a black avoidance or out-group hostility lens (Oliver and Mendelberg 2000). Whereas black concentration within a neighborhood may have historically driven residential decisions among whites, manifested through suburban white flight (e.g., Crowder and South 2008), today educational decision-making among white and affluent parents in urban contexts may reflect a similar impulse. In other words, parents in contemporary American cities with sufficient resources can keep their children "buffered" from low-income and black students (i.e.,

minority avoidance) through one of two key channels: (1) by residentially sorting across school districts on the basis of districts' socio-demographics (Owens 2016, 2017; Rich 2018) or (2) by sending their children to more advantaged non-neighborhood schools, whether public or private. Regarding the latter, recent studies find that an increased concentration of minorities within a neighborhood is associated with the local public schools containing fewer whites than neighborhood socio-demographics would imply (Bischoff and Tach 2018; Candipan 2019), and the gap appears to be larger in areas with more charter schools. Household-level analyses of *within*-district school sorting also reinforce the minority avoidance hypothesis. A greater proportion of blacks in whites' local residential context and/or locally-assigned public school is associated with reduced perceptions of school quality (Goyette et al. 2012) and increased flight to private schools (Fairlie and Resch 2002; Saporito 2009), public schools of choice, such as magnets or charters (Johnston 2015; Renzulli and Evans 2005; Saporito 2003; Saporito and Lareau 1999; Saporito and Sohoni 2006), or traditional public schools outside of the family's assigned catchment zone (Schachner 2020b).

Supplementing Minority Avoidance

The minority avoidance literature on school sorting has enriched stratification research by tempering optimism on declining residential segregation levels (Glaeser and Vigdor 2012), highlighting enduring racial biases and preferences – especially among households with children – despite claims to the contrary (Schuman et al. 1998), and helping explain strong and enduring racial segregation between schools (Reardon and Owens 2014), sixty years after *Brown vs. Board of Education* and thirty years after choice-based school enrollment policies emerged**.** However, the "minority avoidance" lens limits a broader sociological understanding of neighborhood-school decoupling and social stratification.

Whites constitute a diminishing portion of American school children overall, and multiracial metropolitan areas are on the rise. Thus, illuminating drivers and patterns of school sorting across the full distribution of families is crucial. Yet full population studies tracking school choice drivers remain relatively scarce in sociological literature. The few that do often rely on administrative data drawn only from core-city public school districts (Welsh and Swain 2020) to the exclusion of suburban districts and private schools and include limited sets of covariates (e.g., child race, immigrant status, and free/reduced-price lunch eligibility), Moreover, extant work provides insufficient coverage of two rapidly-growing race/ethnic groups: Latinos and Asians. In short, contemporary school sorting as a social stratification process remains undertheorized and undertested. Below, I outline two potential accounts of neighborhood-school decoupling as a socially-stratified process that apply to families of all race and class backgrounds. One derives predictions from the neighborhood attainment literature and the other from the intergenerational reproduction literature.

SCHOOL CHOICE AS A STATUS ATTAINMENT PROCESS

Stratification scholars have long highlighted neighborhoods, schools, and childcare settings as crucial environmental contexts that shape children's development and, in turn, population-level race and class inequalities. However, only one of these contexts – the neighborhood – has become the object of a robust sociological literature on sorting patterns and processes. Until the 1990s, the focus of contextual sorting studies on the neighborhood was well-justified: American children overwhelmingly attended their local public schools, and neighborhood and local public school resources and quality were tightly linked; a separate line of inquiry on school sorting was not critical.

Sociological studies of neighborhood sorting often employ what is known as the neighborhood attainment framework. Following the classic status attainment model, which predicts

the effects of individuals' race, social origins, and lifecycle stage on their income or occupational prestige, neighborhood attainment models estimate similar individual- and household-level factors' effects on neighborhood status, proxied by race and/or class composition (e.g., Alba and Logan 1993; Logan and Alba 1993; Pais 2017; Sampson 2012; Sampson and Sharkey 2008; South et al. 2016; South, Crowder, and Pais 2011). The model assumes all households aim to sort into the highest-status neighborhoods, typically perceived as the richest (e.g., Sampson and Sharkey 2008) and often whitest (e.g., South et al. 2011), that they can. Realizing this preference, however, is contingent on the constraints imposed by individual- and household-level characteristics and by the degree of race and class discrimination within the housing market (see Bruch and Mare 2012; Krysan and Crowder 2017; Quillian 2015). Empirical models estimate whether and why race- and class-based gaps in neighborhood socio-demographics remain after accounting for group gaps in status attainment markers, such as wages, wealth, and educational attainment; in the absence of discrimination, these factors should substantially reduce group-based differences (Massey and Denton 1985). Residual gaps are often chalked up to discriminatory barriers erected by real estate agent and broker steering, zoning regulations, and other institutional mechanisms (Logan and Molotch 1987; Trounstine 2018).

Though rarely considered, this structurally-oriented attainment framework could illuminate not only neighborhood but also school sorting outcomes – especially in an era when rates of neighborhood-school decoupling are sharply increasing (Grady and Bielick 2010; Snyder 2019) and income-based divides in child investments are growing (Kornrich and Furstenberg 2013; Schneider et al. 2018). Analogous to other attainment models, the core assumption of a *school attainment* model would be that school options are organized in a widely shared status hierarchy and that parents seek to place their children in the highest-status K-12 schools they can. In large urban areas, one could reasonably assume that schools of choice (i.e., private, magnet, and charter schools) are perched at

the top of the school status hierarchy.. Enacting these near-universal preferences for school status is contingent on structural factors, such as race, resources, and household structure.

Concretely, high levels of residential segregation by race, income, and immigrant status in American cities (Logan et al. 2004; Reardon and Bischoff 2011), especially among households with children (Owens 2016), and the geographic concentration of elite private, magnet, and charter schools in advantaged neighborhoods (Logan and Burdick-Will 2016) may preclude disadvantaged minority and immigrant parents from fulfilling their desire to send their children to high-status school options (Bell 2009; Corcoran 2018) – especially when transit options are scarce and expensive. In addition to transportation costs, private schools typically impose a major resource barrier in the form of tuition.

Beyond resource constraints, discrimination on the part of school principals and administrators – analogous to race-based steering on the part of real estate brokers and landlords (Korver-Glenn 2018) – may also play a role in stratifying access to private, magnet, and charter schools on the basis of family socio-demographics. Alternative school options often require parents to enlist the support of key institutional gatekeepers to gain access. For example, principals and other administrators (e.g., private school admissions officers) play a crucial role in updating parents on often-complex admissions procedures (Corcoran et al. 2020) and effective strategies to maximize one's chances of acceptance. They may also make exceptions for favored parents who miss deadlines (Fong and Faude 2018) or stumble in navigating various institutional hurdles. It is plausible that these gatekeepers consciously or subconsciously favor white, high-income, and non-immigrant families, to bolster tuition payments and donations (in the case of private schools) or to optimize school performance on high-stakes tests (in the case of publics); the latter practice is well-documented and often referred to as "creaming" (Lacireno-Paquet et al. 2002).

Household structure, while less central than race or class to theoretical accounts of neighborhood attainment, appears to play a nontrivial role in shaping residential sorting and could affect school sorting, as well. All else equal, two-parent and especially married households tend to have higher, more stable incomes and devote more income to child-centered investments (Omori 2010). Though rarely considered, marital status could plausibly shape school sorting, as well, insofar as married couples may better shoulder the burden of tuition costs (in the case of private schools) and transportation burdens (in the case of non-catchment schools of any type) than single or cohabiting/unmarried parents could. The number of children may cut in the opposite direction by reducing resources available for each child to meet tuition and/or transportation costs.

Overall, the school attainment model above implies the following concrete hypotheses. All else equal:

White and Asian children and those with native-born parents enroll in schools of choice than are black and Latino children and those with immigrant parents (Hypothesis #1).

Children from households with higher levels of income and wealth are more likely to enroll in schools of choice (Hypothesis #2).

Households with two parents and fewer children are more likely to send their children to schools of choice than are other household types (Hypothesis #3).

SCHOOL SORTING AS A PROCESS OF INTERGENERATIONAL REPRODUCTION

A skeptic could counter that structural constraints are far less salient in contemporary educational markets than they are in housing market, rendering the attainment framework of limited utility in illuminating socially-stratified school sorting . Whereas urban housing markets typically impose a formidable financial hurdle to high-status neighborhoods in the form of rent or purchase price, and wealth shapes mortgage terms and credit checks, most high-status school options impose minimal resource requirements. Private schools often offer financial aid to disadvantaged students, and while

school-related transportation costs are often nontrivial, public transit can make them surmountable (Corcoran 2018). Moreover, charter and magnet schools typically employ randomization to allocate spots, potentially neutralizing institutional gatekeepers' biases.

With structural constraints reduced, parental education- and skill-based preferences may be amplified. The "concerted cultivation" literature highlights how parents' class position (typically proxied by educational attainment) fosters cultural preferences toward optimizing for children's development. These preferences are manifested through distinct parental practices like facilitating child-oriented investments (e.g., extracurricular activities) (Weininger et al. 2015), navigating educational institutions in ways that ensure their children's needs are being met (Lareau 2011), and exchanging valuable information on school options (Bader et al. 2019). A logical extension of this argument is that highly-educated parents disproportionately seek to enroll their children in high-status school options – like magnet, charter, and private schools – and exhibit the market knowledge and institutional savvy to do so.

A related but distinct strand of this intergenerational reproduction model implicates parents' cognitive and socioemotional skills as key drivers of child-centered parenting strategies. Skills encompass "capacities to act… [shaping] expectations, constraints, and information" (Heckman and Mosso 2014: 691). The conceptual model connecting skills to socioeconomic inequality suggests: cognitive, linguistic, social, and emotional skills shape individuals' socioeconomic outcomes; genetic endowments, parenting tactics, and environmental conditions interact to form children's skills; and skill acquisition occurs in a cumulative and complementary fashion, rendering early childhood experiences especially important (Cunha and Heckman 2007; Heckman 2006). Recent research establishes that highly skilled parents – *of all race, income, and educational backgrounds* – more effectively and consistently engage their children in developmentally-enriching activities like reading and high-quality conversations (Anger and Heineck 2010; Bornstein et al. 1998; Sastry and Pebley 2010) and

may be more attuned to their children's educational needs. A recent study extends this paradigm from day-to-day parenting tactics to residential decision-making: parental cognitive skill levels (operationalized as acquired knowledge, not IQ) predicts stronger preferences for, and efficacy in, optimizing for children's skill development via access to high-status neighborhoods, especially those with high-scoring public schools (Schachner and Sampson 2020).

A logical extension of this argument is that parents' cognitive skills may shape school selection, conditional on neighborhood of residence, especially given the explosion of school quality measures and information via local newspapers and websites like NeighborhoodScout and GreatSchools. These emerging resources may advantage those who prioritize and swiftly process often-complex information. The most cognitively skilled may be more likely to track the constantly-evolving set of school options, exhibit less difficulty in finding the highest-status school options and navigating complex administrative hurdles (e.g., school applications, magnet/charter lotteries) (Corcoran et al. 2020), and enjoy a first-mover advantage in accessing high-status schools, especially those that have recently opened. Moreover, institutional gatekeepers may reward perceived knowledge, signals of engaged parenting, and deft communication skills with valuable support in navigating admissions processes.

Socioemotional skills and health may also implicated, by enabling parents to cope with the inevitable demands and pressures that come with modern parenting – especially in places that are flush with neighborhood and school options and saturated with publicly-accessible information on their quality. In these places, higher socioemotional skills plausibly bolster child-optimizing decision-making and facilitate parents' ability to overcome the institutional hurdles imposed by highly coveted schools. Parents must manage a complex set of processes consisting of paperwork, lotteries, and strict deadlines to turn their choices into reality (Brown 2020; Corcoran et al. 2020; Fong and Faude 2018). Socioemotional skills may enable parents to navigate this fraught bureaucratic terrain and to

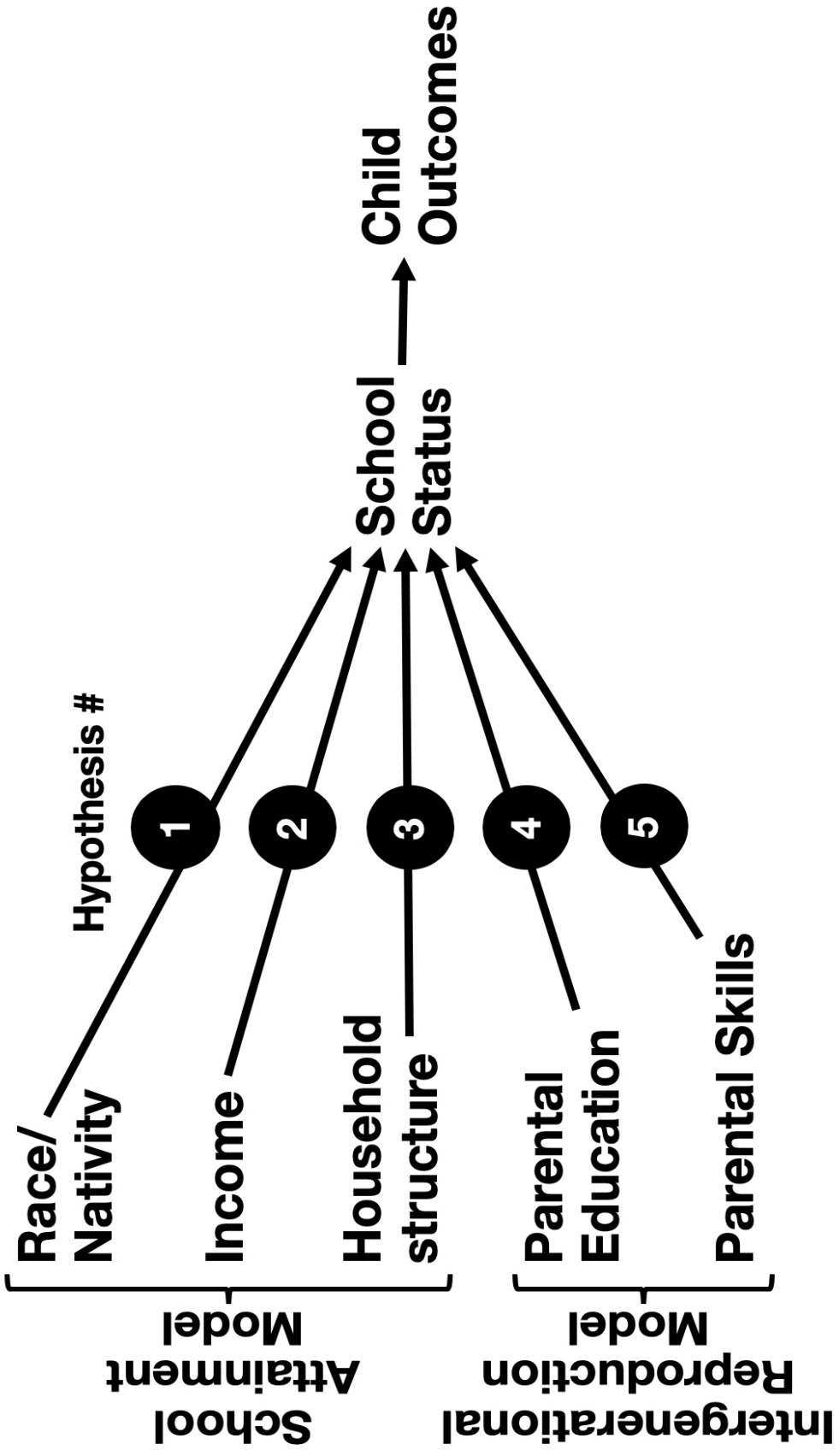
ingratiate themselves to institutional gatekeepers. Indeed, a recent study suggests parents' socioemotional health shapes school enrollment patterns (Schachner 2020a).

These two strands of what I call the *intergenerational reproduction model* of school sorting – one implicating parents' educational attainment and the other parental skills and health – suggest the following concrete hypotheses, which are visualized along with the three previously-articulated hypotheses, in Figure 4.1:

Hypothesis 4: Parental educational attainment is positively associated with children enrolling in a school of choice.

Hypothesis 5: Parental cognitive and socioemotional skills/health are positively associated with children's enrolling in a school of choice.

FIGURE 4.1
Visualization of Core Hypotheses



RESEARCH DESIGN AND METHODS

To test the school attainment and intergenerational reproduction models of school sorting I employ data from L.A.FANS, a panel study that explores the multilevel sources of inequality and wellbeing within Los Angeles County during the 2000s. L.A.FANS wave 1 data collection was conducted in 2000-2002, with a probability sample of 65 Los Angeles County neighborhoods (census tracts). Within each tract, L.A.FANS selected a sample of blocks, and within selected blocks, a sample of households. Within each of the 3,085 households that completed a household roster, researchers attempted to interview one randomly selected adult (RSA) and, if present, one randomly selected child (RSC) under age 18. They also interviewed the primary caregiver (PCG) of the child (who could, or could not, be the RSA but was almost always the child's mother), and a randomly selected sibling of the RSC (SIB). Ultimately, 2,306 RSCs, 1,378 SIBs, and 1,957 PCGs overseeing these children were included in wave 1 data collection. Follow-up interviews were conducted with wave 1 respondents between 2006 and 2008 if they still resided within L.A. County. A supplementary replenishment sample of respondents who did not participate in wave 1 were added to wave 2 data collection to ensure a sample size that was large and representative enough to generate statistically valid cross-sectional estimates for L.A. County resident measures at wave 2. For more details on the L.A.FANS design, see Sastry et al. (2006).

This study centers on school sorting processes among elementary school-aged children because studies suggest parents are most concerned with and proactive in residential and educational decisions when *young* children are present (Goyette et al. 2014; Schachner and Sampson 2020). Middle/junior high school and high school enrollment decisions, on the other hand, likely reflect children's own skills, social networks, and preferences at least as much as parental preferences and constraints, which are the central concerns of this study. Moreover, theories of skill development

suggest skills are more malleable at earlier ages than later ages (Heckman and Mosso 2014). If true, elementary school status and quality may matter more than that of middle and high schools.

With these considerations in mind, I specify my sample to include child-wave combinations in which the RSC or SIB were ages 5 to 10, not enrolled in special education, and for whom a complete L.A.FANS child survey was available. This specification yields an initial eligible sample of 1,453 unique child respondents contacted during either wave 1 or 2, nested within 1,168 unique primary caregivers/households**.** Valid school enrollment information and census tract geocodes are available for 1,332 (92%) of these eligible children. I then exclude those for whom core model variables (described below) were missing (N=183), producing a final sample of 1,149 child respondents, and 926 unique primary caregivers. I link the L.A.FANS-provided school identification codes and census tracts for this analytic sample to Los Angeles County data on public school catchment zones from the year 2002, and California Department of Education data on school types and test scores from 2001 if the child was in elementary school at the time of L.A.FANS wave 1 data collection and 2007 if the child was in elementary school at the time of wave 2. The procedures used to link these various datasets and construct key variables are described below.

School Status as an Outcome

Operationalizing status – whether of occupation, neighborhood, school, or any societal dimension – is often contested, given the possibility that status is likely conceived differently by different groups of people (e.g., by race, class, urbanicity) (see Bruch and Mare 2012). Operationalizing *school* status/desirability is even more difficult due to a lack of standardized data on school socio-demographics and quality across school types and districts and due to a lack of consensus on which school factors predict their causal effects.

In the absence of a commonly agreed-upon status marker for schools, I employ a parsimonious binary measure indicating whether an L.A.FANS child respondent was enrolled in a *school of choice* using L.A.FANS-provided data linked to state administrative data reveal whether each child attended a magnet, charter, or private school (versus a traditional public school). The school type designation is straightforward for students attending private or charter schools at the time of data collection, given that they never share California Department of Education school identifier codes with traditional public schools. Thus, for children whose L.A.FANS-provided school identifier codes are reported by the California Department of Education to be associated with a private or charter school, I mark the child-year as "1", indicating that the child attended a school of choice at the time of data collection.

The remaining children in my analytic sample attended either a magnet school or a traditional public school. My data sources do not easily identify which students are magnet versus traditional public school attendees because many magnet schools share a campus with a traditional public school and therefore do not receive a unique school identification code from the state. However, the state's school directory does indicate whether a given school campus contains a co-resident magnet school. Thus, for all children attending a public school *without* a co-resident magnet, I can safely assume they are traditional public school attendees and therefore mark them as "0", indicating they did not attend a school of choice. The final subset of children attend a public school containing a co-resident magnet program which they may or may not attend. If the primary caregiver of a child within this group indicated her child attended a magnet program during the wave in question, I mark the child as "1", indicating she is a magnet student and therefore enrolled in a school of choice. All remaining children are marked as "0" because I have no evidence they attended a private, charter, or magnet school, even if a co-resident magnet school is located on their school's campus.

School Attainment Predictors

In line with the neighborhood attainment literature, my core school attainment predictors are categorical measures of the child's *race/ethnicity* (i.e., reference: white, black, Latino/Hispanic, Asian/Pacific Islander, Other/Multiracial), a binary indicator of whether the child's primary caregiver is a *first-generation immigrant* (i.e., not born in the United States), and a continuous measure of the child's *household income (logged)*. The latter is wave-specific, encompassing all income sources reported by the head of household at wave 1 or 2. This estimate is standardized to year 1999 dollars and then logged to reduce the distribution's skew. For most missing household income values, L.A.FANS provides estimated imputed values (Peterson et al. 2012).

I supplement these core structural predictors with three others that are often missing from school sorting analyses, especially those drawn from administrative data sources. First, I include a binary measure of whether the child resides in a home that is *owned* (reference: rented) at the time of data collection; home ownership is a common proxy for wealth, which may be important when sending a child to private school. I also incorporate two household structure proxies, including whether the primary caregiver is *married* (reference: single and/or cohabiting) and a continuous measure gauging the *number of children* in the household at the time of data collection, given that household transportation resources are critical to activating school choice, but they are likely strained among single-parent households with many children.

Intergenerational Reproduction Predictors

Shifting from structural factors to education and skills/health, which are central to intergenerational reproduction accounts of inequality, I first construct a set of categorical variables to gauge the primary caregiver's *educational attainment* (reference: completed no college, some college, or a

bachelor's degree), reported at the time of data collection. I also include two parental skill measures, which are rarely employed in contextual sorting studies (Schachner and Sampson 2020), especially school sorting studies. The first is a measure of the primary caregiver's cognitive skills, typically conceptualized in the skills and stratification literature as acquired knowledge (Heckman et al. 2006; Kautz et al. 2014). I use results from the Woodcock-Johnson *Passage Comprehension* assessment, conducted in either English or Spanish, based on the earliest wave of data available for a given primary caregiver because L.A.FANS typically only fielded the test to PCGs once, even if they were panel respondents. The test captures individuals' ability to process written information, a theoretically important skill for evaluating school options, by asking test takers to identify missing key words from short passages of increasing complexity. I convert the national percentiles rankings generated by the test, which are highly skewed, into sample-based percentiles. Note that passage comprehension scores are highly correlated with scores generated by Woodcock-Johnson tests gauging other cognitive skill types (0.6 – 0.7).

The other parental skill measure I employ is a commonly employed proxy for individuals' socioemotional skills: the *Pearlin Self-Efficacy Index*. The index is constructed by averaging Likert Scale-constructed answers to six questions (two of which are reverse-coded) that gauge the extent to which primary caregivers believe they can effectively translate their goals and objectives into reality. Concretely, questions ask respondents to report beliefs in their abilities to solve problems and exert control over their conditions, as opposed to feeling helpless and pushed around. Note that this index, unlike the cognitive skill measure, is recalculated for each primary caregiver at each wave. Thus, I employ the index value that is temporally aligned with that of the school enrollment outcome in the analytic sample. To reduce skew and ensure a parallel scale to the cognitive skill proxy, I convert each primary caregiver's average Likert Scaled score across all six questions into a sample-based percentile ranking. For more details on Pearlin Self-Efficacy Index, see Pearlin et al.

(1981). I supplement the socioemotional skill measure with a closely related socioemotional health control – the *probability of depression*, ranging from 0 to 1, exhibited by each child's primary caregiver because recent research suggests this factor independently predicts school sorting outcomes (Schachner 2020). This metric is based on respondents' answers to the Composite International Diagnostic Interview-Short Form (Kessler et al. 1998), which was developed by the World Health Organization, based on the Diagnostic and Statistical Manual of Mental Disorders, and used in the U.S. National Health Interview Survey. I convert this linear measure into a binary one to facilitate interpretation and mitigate the highly skewed nature of the distribution. A probability of depression over 0.5 is marked 1, indicating a high likelihood of depression; any lower probability is marked 0.

Controls

I control for child *age* at time of data collection and *sex* (reference: male) and include fixed effects for the child's *census tract of residence* at the time of data collection. Inclusion of these fixed effects provide an unusually rigorous test of my core hypotheses for three reasons. First, the quality of children's local catchment-based public school option likely varies considerably between tracts even within the same district but minimally within tracts, given that residents of the same tract typically live within the same catchment school's boundaries. Second, since spatial proximity appears so crucial in shaping school sorting (Corcoran 2018), the tract fixed effect essentially controls for spatial differences in parents' proximity to, and quality of, plausible school options. Third, between-neighborhood selection is likely to be an even more highly selected process than is between-region and between-district sorting. If neighborhood sorting is nontrivially shaped by unobserved factors, as neighborhood effects skeptics have long noted (Jencks and Mayer 1990), then the tract fixed effect may partially net out these factors' confounding effects on the depression-school selection

association. These fixed effects essentially disentangles predictors of *school* sorting from predictors of *neighborhood* sorting; the vast majority of sociological literature treats the two sorting processes as one and the same.

ANALYTIC STRATEGY

My core analyses predict the binary outcome of whether a child attends a school of choice (i.e., magnet, charter, or private(using logistic regression models (Equation 1):

$$log\left(\frac{pj}{1-pj}\right) = \beta_0 + \beta_1 x_{1j} + \beta_2 x_{2j} + \delta_{12} x_{2j} x_{1j} \ldots$$

p_j is the probability of a given child-year *j* entailing the child attending a school of choice, whether a magnet, charter, or private school. This outcome's log odds are predicted as a function of the child-, parent-, household-, and tract-level variables (x_{kj}) described above. The key parameters are captured by β_x, the coefficients gauging the estimated effects of predictors drawn from the school attainment and intergenerational reproduction accounts on the log odds that a child attends a school of choice (versus a traditional public school) for the sample as a whole. A positive coefficient value would indicate that a given factor predicts a higher likelihood of school choice activation; a negative value would suggest the opposite.

DESCRIPTIVE RESULTS

According to the California Department of Education, approximately 1,200 public elementary schools (serving Kindergarten through 5th grades) and 1,000 private schools – which typically have far fewer students – were operational in Los Angeles County during the L.A.FANS panel study:

2000 through 2008. Of the public schools, approximately 85 were designated by the state as containing a magnet program, and the number of charter schools grew from 53 to 118.

Shifting from ecological to individual data, my analytic sample suggests that 16% of elementary-aged Angelenos during the 2000s attended a school of choice, whether a magnet, charter, or private school. Table 4.1 permits a more granular analysis of school sorting patterns by school sector. The left-hand column provides mean values of each variable for children attending a traditional public school, the middle column provides means for children attending a magnet or charter, and the right-hand column provides means for children attending a private school. The hypothesized school attainment model would predict disadvantaged racial minority and lower-income children to be overrepresented in the traditional public school sector and more structurally advantaged children to be overrepresented in the two higher-status school options. Indeed this is the case. For example whites, who constitute only about 18% of the total analytic sample, are underrepresented within traditional public schools (15%), and overrepresented in each alternative school option: magnet/charter (26%), and especially private school (38%). Conversely, Latinos constitute 55% of the analytic sample, and are overrepresented within residentially-assigned public schools (60%) and the magnet/charter option (59%), but sharply underrepresented in the private school sector (19%). Average household income levels also appear to be higher among school choice attendees, increasing from 10.26 in logged units among traditional public enrollees to 10.47 among magnet/charter enrollees and finally 11.25 among private school enrollees.

TABLE 4.1

Descriptive Statistics: L.A.FANS Pooled Child Sample (Ages 5 – 10)

School Type at Data Collection	Traditional Public		Magnet or Charter		Private	
Variables	Mean	S.D.	Mean	S.D.	Mean	S.D.
Race/Nativity						
White	0.15	0.36	0.26	0.44	0.38	0.49
Latino	0.60	0.49	0.59	0.50	0.19	0.39
Black	0.09	0.29	0.00	0.00	0.16	0.37
Asian	0.05	0.22	0.09	0.28	0.15	0.36
Other/Multiracial	0.10	0.30	0.06	0.25	0.12	0.33
PCG first generation immigrant	0.54	0.50	0.67	0.48	0.27	0.45
Income/Wealth						
Household income (logged)	10.26	0.93	10.47	0.99	11.26	1.14
Household owns home	0.40	0.49	0.63	0.49	0.69	0.47
Household Structure						
PCG married	0.67	0.47	0.65	0.48	0.77	0.43
Number of children in household	2.65	1.15	2.68	1.44	2.34	0.92
Educational Attainment						
PCG completed no college	0.61	0.49	0.50	0.51	0.11	0.32
PCG completed some college	0.28	0.45	0.36	0.49	0.40	0.49
PCG Bachelor's degree+	0.11	0.31	0.14	0.35	0.49	0.50
Cognitive & Socioemotional Skills						
PCG W-J Passage Comprehension Percentile	46.99	29.10	53.73	25.42	71.16	25.25
PCG Pearlin Self Efficacy Index Percentile	45.81	28.68	51.10	26.78	59.88	31.52
PCG High Probability of Depression	0.12	0.33	0.06	0.25	0.05	0.23
Local Public Elementary School Attributes						
% Students who are Latino/Black	75.84	23.54	75.14	24.50	61.96	25.36
Average Similar School Ranking	6.32	2.36	6.80	2.53	6.13	2.67
Child *N*	960		47		142	

Notes

[a] All means are weighted to adjust for L.A.FANS sampling design and attrition (the latter for wave 2 observations only).

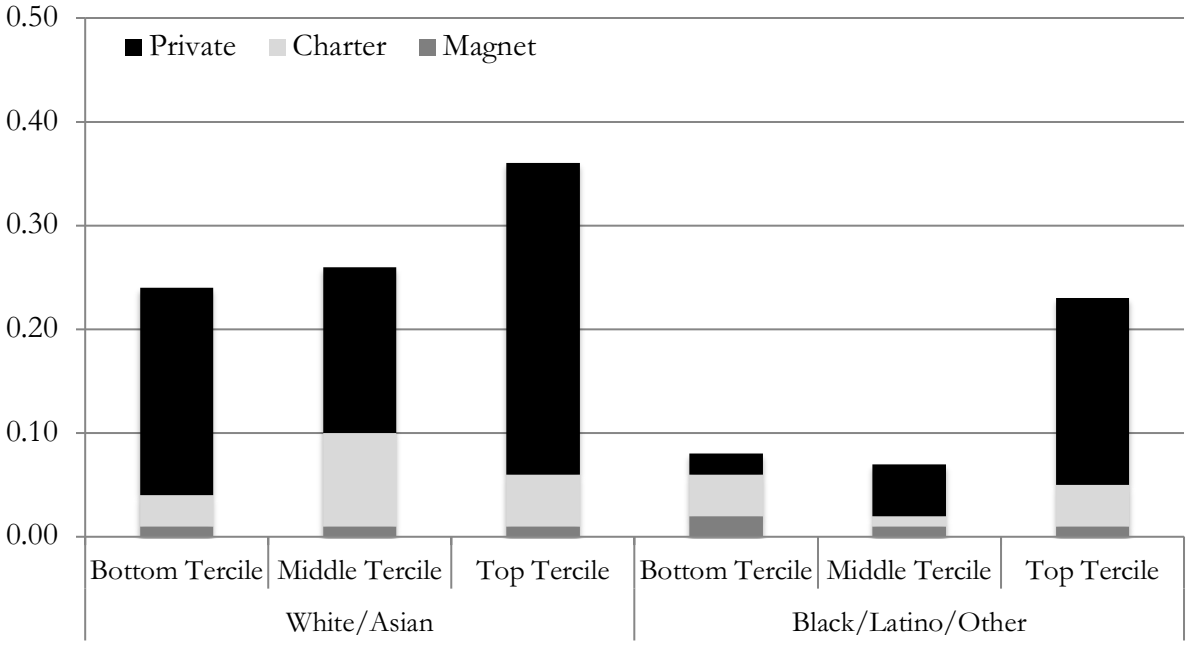
[b] 50.60% of the sample is female, average age is 7.68, 68% of child-level observations are drawn from wave 1, 32% are drawn from wave 2.

However, another less-frequently examined pattern – congruent with the hypothesized intergenerational reproduction model – is also evident: children enrolled in schools of choice are disproportionately likely to have highly-educated and highly-skilled parents. For example, children who attend a traditional public school are less likely to have a primary caregiver with a bachelor's degree (11%) than are children who attend a magnet/charter (14%) and especially a private school (48%). Similar patterns emerge when examining the average cognitive skill sample-based ranking of children's primary caregivers, which rises from the 47th percentile among traditional public school enrollees to about the 54th percentile among magnet/charter students to the 71st percentile among private school enrollees. A similar, but less steep, gradient is evident when it comes to primary caregivers' socioemotional skills. Lastly, children who attend a school of choice are about half as likely to have parents with a high probability of depression as are children who attend a traditional public school.

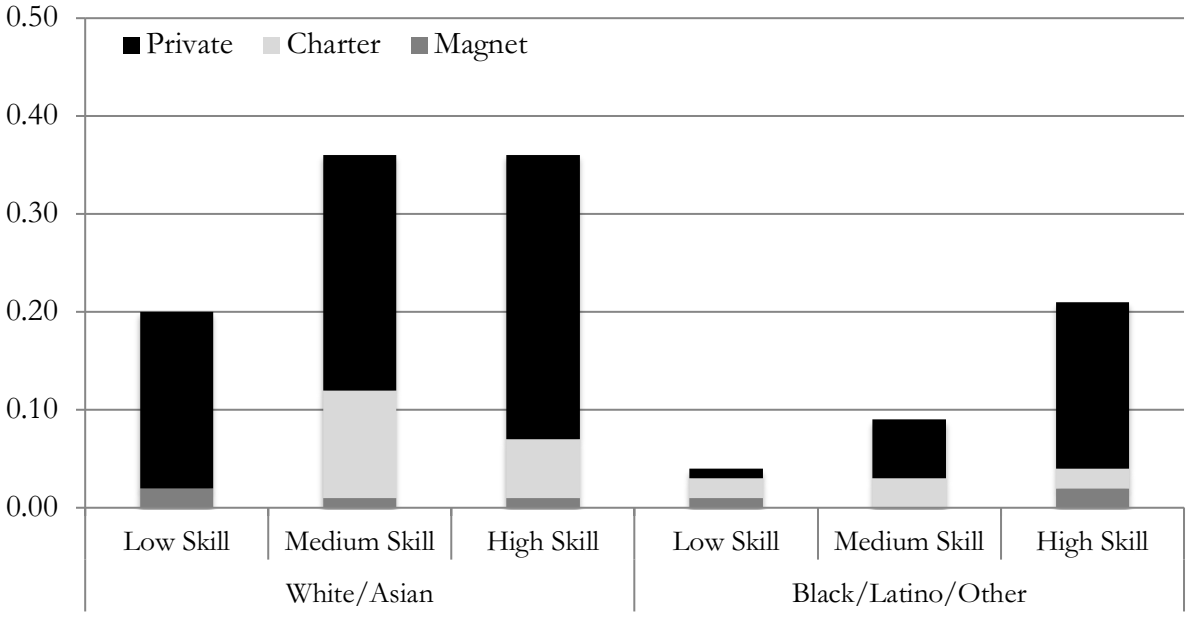
A visualization of school sorting patterns by race/ethnicity and income, as well as by race/ethnicity and cognitive skills (Figure 4.2) provides preliminary evidence that both the structurally-inflected school attainment account and skill-centered intergenerational reproduction account may provide traction in illuminating which children attend schools of choice. Sizable race-based disparities in school choice are evident when comparing the racially advantaged stratum (i.e., whites/Asians) to the racially disadvantaged stratum, even when controlling for household income (Panel A) or parental cognitive skills (Panel B). Moreover, *within* each racial strata, both income and parental cognitive skills appear to stratify the propensity of children to attend a school of choice, especially private schools.

FIGURE 4.2
Unconditional Probability of Enrollment in a Magnet, Charter, or Private School
By Race/Ethnic Stratum, Income, and Skills

A. By Race/Ethnicity and Household Income Tercile



B. By Race/Ethnicity and Primary Caregiver's Cognitive Skill Level



Notes
[a] Income terciles defined (in constant 1999 dollars) as: Bottom: < $20,000, Middle: $20,000 – $44,299, Top: > $44,300.
[b] Skill levels defined as: Low < 33th sample-based percentile, Middle: 34th – 66th percentile, High: >66th percentile.

SCHOOL SORTING AS AN ATTAINMENT AND INTERGENERATIONAL PROCESS?

Multivariate models are required to more rigorously establish whether race, income, parental educations, and/or skills exert effects on children's propensity to attend a school of choice. Before shifting to the model results, it is worth noting that these predictors are correlated but less so than often assumed. Within this analytic sample, household income (logged) is correlated only 0.32 with primary caregivers' cognitive skills, 0.21 with socioemotional skills, and 0.42 with whether or not she has a bachelor's degree (full correlation matrix available upon request). Thus, parental skills and education plausibly exert effects on school sorting that are not subsumed by classic structural predictors.

Recall that the structurally-oriented school attainment model (Hypotheses #1 – 3) suggests that race/nativity, resources, and household structure predict school status, but that residual racial gaps in school status remain net of the latter two clusters of factors. Beginning with a simple logistic regression containing only basic controls and race/nativity variables (Table 4.2, Model 1), with census tract fixed effects, only the white-Latino and native-first generation immigrant gaps in school choice propensity are statistically significant ($p < 0.01$). This finding is notable because neighborhood attainment studies typically find a large white advantage over all other racial groups, especially blacks – even in multiracial Sunbelt metropolises like Los Angeles (Sampson et al. 2017).

TABLE 4.2

Effects of Child, Parent, and Household Characteristics on Likelihood of Enrolling in a Magnet, Charter, or Private School, Logit Models (Household N = 650, Child N = 781)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Race/Nativity										
Latino	-2.049**	0.661	-1.875**	0.700	-1.929**	0.715	-1.831*	0.727	-1.784*	0.707
Black	-0.867	0.799	-0.604	0.794	-0.846	0.814	-0.938	0.791	-0.815	0.750
Asian	0.946	0.693	0.907	0.740	0.781	0.755	0.529	0.752	0.931	0.865
Other/Multiracial	-0.709	0.800	-0.793	0.833	-0.865	0.833	-0.930	0.860	-1.088	0.815
PCG first generation immigrant	-1.286**	0.424	-1.145*	0.445	-1.030*	0.428	-0.866	0.464	-0.541	0.447
Income/Wealth										
Household income (logged)			0.502*	0.249	0.587*	0.261	0.477	0.256	0.444	0.251
Homeowner			0.84	0.585	0.911	0.598	0.821	0.638	0.831	0.649
Household Structure										
PCG Married					-0.538	0.420	-0.614	0.451	-0.576	0.465
Number of children in household					-0.130	0.161	-0.076	0.179	-0.131	0.177
Educational Attainment										
PCG Completed some college							0.982*	0.458	0.844	0.467
PCG Bachelor's degree+							1.650**	0.594	1.083	0.606
Cognitive & Socioemotional Skills/Health										
PCG W-J Passage Comprehension									0.015*	0.007
PCG Pearlin Self Efficacy Index									0.009	0.007
PCG High Probability of Depression									-1.382*	0.691
Constant	0.591	0.825	-5.849*	2.571	-6.290*	2.756	-6.035*	2.819	-6.781*	2.831

Notes

[a] All models contain controls for child age, gender, census tract of residence, wave of data collection and are adjusted for L.A.FANS sampling/attrition weights.

[b] Standard errors are clustered by census tract of residence.

[c] *p < .05, **p < .01 (two-tailed test).

Do income and wealth independently predict school status and potentially mediate race/nativity gaps, as is typically the case in the neighborhood attainment literature? Model 2 suggests household income (logged) independently predicts an increased likelihood of school choice enrollment ($\beta = 0.50$, $p < 0.05$). Net of income and wealth, the white-Latino and nativity gaps in school status remain significant, as they do once household structure variables – which are not significant – are added in (Model 3). The household income variable remains significant in this model, as well.

The story shifts considerably, however, once intergenerational reproduction variables are included. Starting with educational attainment (Model 4), children of primary caregivers who attended college or have bachelor's degrees are significantly more likely to attend schools of choice than are children whose primary caregivers did not complete college. Yet the previously-observed nativity gap attenuates to nonsignificance, as does the household income effect, though the Latino-white gap remains significant at the $p < 0.05$ level.

In the subsequent model (Model 5), which adds in primary caregivers' cognitive and socioemotional skill sample-based rankings and parental depression probability, parents' cognitive skills are positively and significantly correlated with school choice enrollment ($\beta = 0.015$, $p < 0.05$), while parental depression probability cuts in the opposite direction ($\beta = -1.382$, $p < 0.05$). The Latino dummy variable is the only other variable that remains significant in this most-complete model ($\beta = -1.784$, $p < 0.05$)..

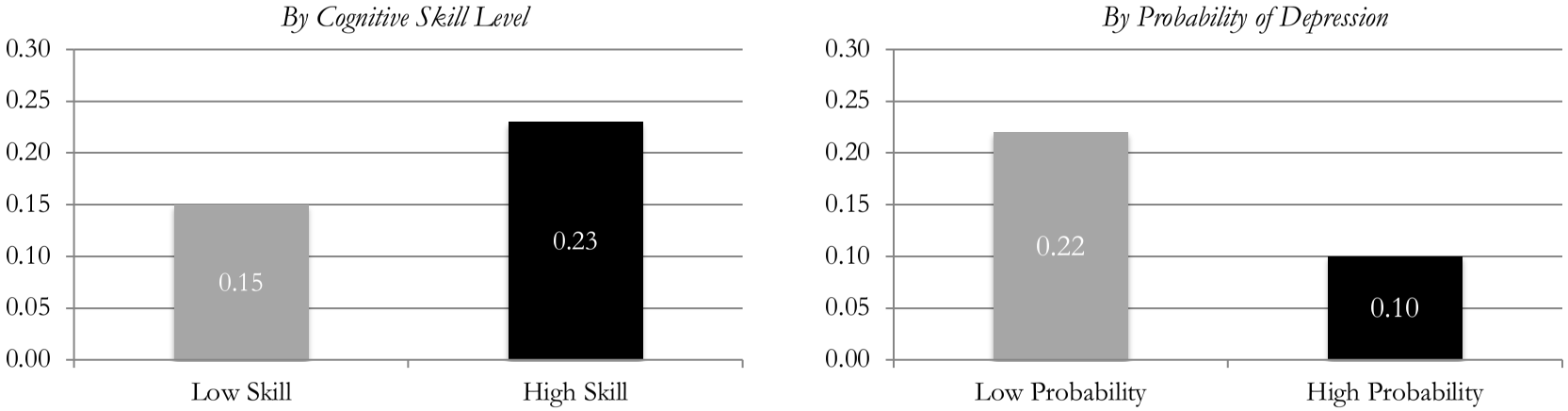
Conditional predicted probabilities based on these models are visualized in Figure 4.3, Panel A. The figure shows that that, all else equal, a child of parent at the 75th percentile of the sample-based distribution of cognitive skills is over 50% (or 8 percentage points) more likely to enroll a school of choice than is a child of a parent at the 25th percentile of the distribution. Parental depression also appears to exert a large independent effect on school choice. All else equal, children

of parents who are likely depressed parents are 55% (12 percentage points) less likely to attend a school of choice than are children of parents who are unlikely to be depressed.

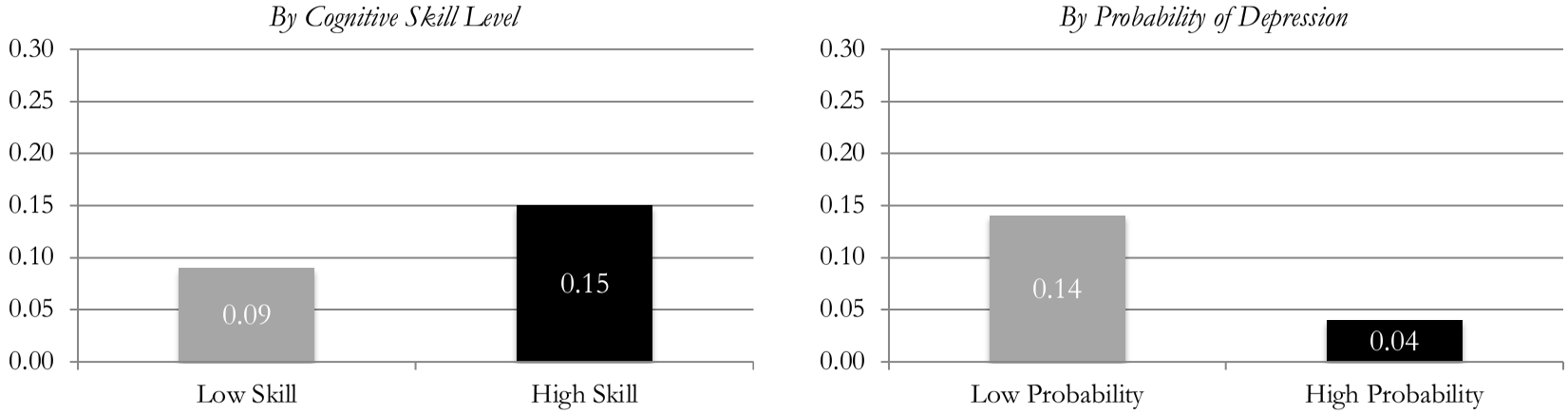
FIGURE 4.3

Conditional Probability of Attending a Magnet, Charter, or Private School by Cognitive Skill Level and Probability of Depression

E. Full Sample



F. Latino/Black/Other Children Only



Notes

[a] Low cognitive skill level is defined as 25th percentile of sample distribution; high defined as 75th percentile. Low depression probability is defined as 0.5 or lower; high probability is defined as over 0.5.

[b] Panel A simulations are based on Table 4.2, Model 5. Panel B simulations are based on Table 4.3, Model 2.

Taken together, Table 4.2's models provide evidence in support of the skills and socioemotional health strands of the intergenerational reproduction model (Hypothesis #5). However, the residual Latino-white gap in school choice probability suggests a key structural factor – race—may play nontrivial roles in shaping school sorting patterns, providing some support in favor of Hypothesis #1. Note that in the neighborhood attainment literature, race and income gaps in neighborhood status typically remain large and significant even after accounting for a wide range of potential confounders, including education and skills. Yet this study's school sorting model show that parental skills exert strong, independent effects on school status while household income and wealth do not.

Race/Ethnic Heterogeneity in Skill and Socioemotional Health Effects?

The models presented thus far illustrate school sorting patterns *across all racial groups* and suggest skills may play important roles. Does the same patterns emerge *within* racial groups? As noted at the outset, far more sociological work has centered on advantaged groups' patterns and drivers of school sorting than the more disadvantaged; racial heterogeneity, in particular, is rarely probed. To rectify these gaps, I stratify my analytic sample in two: with the advantaged racial stratum consisting of white and Asian children and the disadvantaged group consisting of Latino, black, and other/multiracial children and run models identical to the most complete from Table 4.2, but make two key shifts. First, I replace census tract fixed effects with fixed effects representing which of eight commonly-conceived regions of Los Angeles County each child resides within (for more details on these county regions, see Sampson et al. (2017) and Schachner and Sampson (2020) I make this decision to mitigate statistical power limitations associated with employing census tract fixed effects when running models on smaller, racial subsamples. Second, I bring in two census tract-level variables that, based on prior studies, appear to shape school sorting patterns: a spatially-weighted

measure representing the average concentration of Latino and black children in local public schools and the average value-added quality of local schools based on the California State Department of Education's Similar Schools Ranking. Both factors could conceivably confound the observed skill, health, and race effects on school sorting generated by the most complete model in Table 4.2.

The baseline model in Table 4.3 (Model 1) runs this slightly modified specification on the full analytic sample. Despite the replacement of census tract fixed effects with county region fixed effects and the inclusion of two potentially salient tract-level covariates, the previously-observed parental cognitive skill and parental depression effects remain significant and run in the expected directions. In this model, not only are Latinos at a disadvantage to whites as the previous model suggested, but Other/Multiracial children are as well (β = -0.957, $p < 0.01$). Moreover, homeownership also appears to boost school choice enrollment probability (β = 1.012, $p < 0.01$), as does having a parent who attended college (β = 1.038, $p < 0.05$) or completed a bachelor's degree (β = 1.015, $p < 0.05$). Note, too, that minority avoidance appears to shape school choice; all else equal, the higher the concentration of Latinos and blacks in local public schools, the higher the likelihood a child will attend a school of choice (β = 0.025, $p < 0.01$).

Are parental skill and health factors disproportionately more – or less – salient to school sorting among racially disadvantaged children than they are among the advantaged? Starting with the disadvantaged subsample, one might expect that even if highly-skilled parents disproportionately exhibit stronger preferences for school status, institutional gatekeepers' racial biases may stymie their efforts. However, Table 4.3, Model 2 which replicates Model 1 for only the disadvantaged subsample suggests both cognitive and socioemotional skills exert significant and positive effects for this group. Moreover, depression probability exerts a significant and negative effect on school choice. Meanwhile, the coefficients on parental education variables remain significant and positive as they did in the prior model, as is household income (logged).

TABLE 4.3

Heterogeneous Effects of Child, Parent, Household Characteristics on Likelihood of Enrolling in a School of Choice, Logit Models

School outcome	Model 1		Model 2		Model 3		Model 4		Model 5	
Subsample	Magnet, Private, or Charter		Magnet, Private, or Charter		Magnet, Private, or Charter		Private or Charter		Private Only	
	All Children		*Latino/Black/Other*		*All Children*		*All Children*		*All Children*	
Variables	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
PCG W-J Passage Comprehension	0.012*	0.005	0.016**	0.006	0.019**	0.006	0.018	0.009	0.027*	0.0118
PCG Pearlin Self Efficacy Index	0.009	0.007	0.011*	0.005	0.013*	0.006	0.016*	0.007	0.024*	0.122
PCG High Probability of Depression	-0.991*	0.502	-1.499**	0.457	-1.630**	0.448	-1.689**	0.470	-2.374**	0.9034
PCG Pass. Comp. X White/Asian					-0.016	0.013	-0.015	0.014	-0.027	0.016
PCG Pearlin X White/Asian					-0.009	0.010	-0.013	0.009	-0.030**	0.011
PCG High Dep. X White/Asian					1.429**	0.496	1.504**	0.013	2.824*	1.350
Child attributes										
White or Asian					1.965	1.019	1.783	1.225	3.553*	1.423
Latino	-1.041**	0.355	(ref.)							
Black	-0.768	0.428	0.293	0.461						
Asian	0.522	0.358								
Other/Multiracial	-0.957**	0.344	-0.057	0.389						
PCG first generation immigrant	-0.210	0.162	-0.048	0.383	-0.174	0.212	-0.098	0.223	-0.653**	0.229
Parent or household attributes										
Household income (logged)	0.325	0.182	0.459*	0.232	0.342	0.185	0.407*	0.183	0.474	0.248
Homeowner	1.015*	0.442	0.946	0.676	1.095*	0.490	1.226*	0.526	0.565	0.376
PCG married	-0.526	0.374	-0.653	0.471	-0.656	0.441	-0.807	0.416	-0.413	0.365
Number of children in household	0.070	0.151	0.053	0.226	0.069	0.158	0.139	0.167	0.026	0.205
PCG completed some college	1.012**	0.190	1.004*	0.458	0.945**	0.205	1.107**	0.243	1.124*	0.461
PCG Bachelor's degree+	1.318*	0.545	1.874*	0.928	1.240*	0.525	1.314*	0.560	1.521**	0.490
Local elementary school attributes										
% Latino/black students	0.025**	0.008	0.028**	0.005	0.021**	0.006	0.016*	0.470	0.015	0.008
Average Similar School Ranking	-0.026	0.055	0.073	0.073	-0.042	0.054	-0.045	0.058	-0.122	0.065
% Latino/black X White/Asian					0.009	0.014	0.015	0.013	0.018	0.016
Constant	8.833**	2.669	10.629**	3.324	10.482**	2.845		2.898	11.272**	3.516
Household *N*	926		699		926		926		926	
Child *N*	1,149		857		1,149		1,149		1,149	

Notes

[a] Models contain county region fixed effects, controls for child age, gender, and data collection wave.

[b] Standard errors are clustered by county region.

[c] *$p < .05$, **$p < .01$ (two-tailed).

These findings raise the possibility that skills are actually more important for disadvantaged minorities than they are for whites and Asians. I test this possibility by returning to the full analytic sample and adding in interactions between racial stratum and cognitive skills, socioemotional skills, and socioemotional health (Model 3), while preserving all other controls and county region fixed effects. These interaction terms suggest only depression exerts a stronger negative effect for the racially disadvantaged than for the white/Asian stratum ($\beta = 1.429$, $p < 0.01$). All main effects remain largely unchanged compared to the prior model.

Models 4 and 5 employ identical specifications as Model 3 but the outcome is more narrowly specified to two specific types of choice: private or charter, but not magnet (Model 4) and private only (Model 5). These models reduce the potential role of measurement error introduced by indirectly inferring which children attend magnet schools. Yet both sets of model results are largely consistent with those produced by Model 3. All else equal, higher levels of parental cognitive and socioemotional skills/health appear to shape school choice, regardless of how the choice outcome is constructed. Moreover, there is some evidence that parents' socioemotional skills predict private school enrollment to a greater degree among racially disadvantaged children than among the more advantaged.

Overall, the skill and socioemotional health strand of the intergenerational reproduction model of school sorting (Hypothesis #5) receives more robust and consistent support as a driver of school sorting than does the school attainment model among the full sample and perhaps especially within the disadvantaged sample. Although there is some evidence of white-Latino and parental educational attainment disparities, these patterns are considerably less robust than skill-based

disparities; indeed, Thus, *skill- and socioemotional health-based based contextual sorting* emerges as a rarely considered driver of school sorting.

DISCUSSION & CONCLUSION

Increasing numbers of children in American cities are opting out of traditional public schools. However, sociological research on school sorting as a socially-stratified process – distinct from residential sorting – remains scarce with one notable exception: studies documenting advantaged and especially white families leveraging school alternatives to avoid minority children in their local schools. This study set out to theoretically develop and empirically test a more expansive account of school sorting that explains not only whites' propensity to bypass their local public schools but also why increasing shares of non-white children – who constitute the vast majority of students in many metropolitan areas – are doing the same. To this end, I leverage the well-developed literature on another form of socially-stratified contextual sorting – the neighborhood attainment paradigm – to derive hypotheses on how race, economic resources, and household structure may explain school sorting. I then draw on the burgeoning literatures on concerted cultivation and skill-based parenting to propose an alternative possibility: that parental education and skills shape school sorting, even after accounting for traditional structural factors.

Data on over 1,000 Angeleno children and logistic regression models predicting their schools' status support the skills and health strand of the intergenerational reproduction model: parents' cognitive skills and socioemotional health consistently predict school status for the sample as a whole, and particularly for black children, even after controlling for a wide range of traditional structural characteristics and spatial differences in families' plausible school choice sets. On the

other hand, the structurally-inflected school attainment hypothesis, which draws heavily from the status and neighborhood attainment traditions, receives less support; white-Latino are evident, but the large the expected penalties of being black or having lower household income do not appear consistently salient to school sorting as they do to neighborhood sorting.

These analyses have important implications for the sociology of education and urban stratification literatures, which have long assumed that neighborhoods and schools were tightly linked and, as such, cast local public schools as central to the causes and consequences of American residential segregation. This study reinforces recent work suggesting neighborhood and school selection need to be conceptualized as related but distinct social processes (Lareau and Goyette 2014) that implicate different parent, household, and child-level factors. We know that race and class loom large in dictating *neighborhood* conditions, but the results here suggest we cannot automatically infer they play an outsized role in stratifying *educational* conditions. After accounting for neighborhood-level differences, school choice systems appears to reward children less on the basis of race and class and more on the basis of parental skills and health.

This is no cause for celebration. The findings merely suggest that while neighborhoods may mediate the intergenerational transmission of structural (dis)advantage (Sharkey 2013), schools may mediate the intergenerational transmission of skills (Schachner 2020) – two possibilities that should be explicitly tested using causal mediation analyses. Of course, skills are profoundly shaped by structure (Sampson, Sharkey, and Raudenbush 2008), so it may be difficult to truly separate the two. Nonetheless, future stratification scholarship should attempt to disentangle the distinct causes and consequences of residential and educational selection and simultaneously assess structural and skill-based explanations for each. Ideally, an integrated theoretical framework that considers whether and

why race, income, wealth, education, skills shape sorting into various contextual domains that are crucial for children's development – i.e., neighborhoods, schools, and childcare – will emerge.

Highlighting skills as a central driver of contemporary stratification may elicit resistance within a discipline that has long viewed these individual-level attributes with skepticism (England 2016). But this study and others (e.g., Sastry and Pebley 2010; Schachner and Sampson 2020) make a compelling theoretical and empirical case for skills and opportunity structures interacting to produce inequality, in general, and to stratify contextual conditions, in particular. Further theorizing is needed to clarify how skills, education, and culture are related and how they interact to reproduce inequality across generations. This is a thorny task, but it will likely invigorate and valuably refine conceptual models of intergenerational reproduction that have resided at the heart of sociology since Bourdieu.

Limitations, Extensions, and Policy Implications

Admittedly, this study examined a relatively small and narrowly-defined analytic sample of elementary-aged children within a particular timeframe and metropolitan area that may not resemble other places and other eras. Indeed, the choice set of plausible school options likely varies sharply across place and time, as well as across the age distribution. Future studies should theorize and empirically examine whether and why the school attainment or intergenerational reproduction hypotheses provides more traction in illuminating school sorting patterns in particular types of places, time periods, and within particular segments of the age distribution. I believe the intergenerational reproduction account may matter more for young children in large metropolitan areas when school options are plentiful and school enrollment rules liberalized, but future studies should leverage larger samples, perhaps even administrative data, to test these possibilities.

This study's primary outcome – school status – is a difficult concept to operationalize, just as all other manifestations of status (e.g., neighborhood status) are. I attempted to employ a theoretically- and empirically-justified and parsimonious operationalization of school status (i.e., school choice) but alternative operationalizations should be considered and tested. Future studies might use value-added measures of school quality as the core school status outcome, given that these measures appear to capture schools' causal effects on skill development far better than do average test scores or socio-demographics (Lloyd and Schachner 2020). Better yet, studies employing qualitative and experimental methods could be leveraged to understand parents' stated preferences regarding which school status proxies are most valued and whether these preferences vary by race, income, education, or skills. Eventually, studies should relax the assumption of homogeneous preferences for school status and probe which types of parents and children disproportionately optimize for which particular school characteristics, beyond status (e.g., test scores, race/class composition, geographic proximity, truancy, extracurriculars), using discrete choice models that account for the spatial proximity of plausible school options.

Lastly, the key finding of this study – that parental skills shape school sorting – requires more scrutiny in future work. I attempted to account for a wide range of potential confounders, including the uneven spatial distribution of school options and difficult-to-observe heterogeneity captured by census tract fixed effects. However, more plausibly causal skill effect estimates could be generated by leveraging exogenous shocks such as the introduction of school rating systems – which might be predicted to amplify skill effects on school sorting – or the rapid expansion of charters, magnets, private schools or liberalization of school enrollment rules. Other potential explanations of school sorting beyond skills were missing, such as parental physical health, cultural orientations, and

social networks. Incorporating more information on children's own educational background and skills, mental/physical health, and social networks would also be helpful.

Despite these limitations, this study points the way to a richer account of contemporary school sorting with important policy implications. Choice-based policies, which have transformed America's educational landscape, risk amplifying rather than attenuating the role of parental skills in shaping their children's trajectories. Other forms of choice-based policies, like housing vouchers, may do the same and should be reexamined from this perspective. Empowering parents of all skill levels with clear and actionable information on school and neighborhood quality and counseling appears promising (Bergman et al. 2019). But ultimately narrowing the distribution of parental skills and of childcare, school, and neighborhood conditions may be necessary to meaningfully reduce the intergenerational transmission of skills and status.

Conclusion

In this dissertation, I revisit a longstanding line of sociological inquiry: which families gain access to the most skill-promoting neighborhoods, schools, and childcare settings available? Theoretical progress on this question has lagged that made on other spatial stratification questions, such as why and for whom neighborhoods matter. I proposed a theoretical shift in how stratification scholars conceptualize contextual sorting: from a primarily structural process pertaining to residential mobility and implicating race and resources to an overlooked pathway of intergenerational reproduction that highlights not only residential but also educational sorting.

The intergenerational reproduction lens I apply draws attention the roles of parental class, educational attainment, culture, and skills in stratifying the quality of children's environmental contexts even after accounting for race and income differences. I pay particular attention to parents' cognitive and socioemotional skills, given their scarcity in recent sociological research on reproduction and their theoretical importance in contemporary residential and educational markets. My view is not that cognitive and socioemotional skills *supplant* race and resources as explanations for contextual stratification but that they *supplement* these explanations by providing additional explanatory power in certain contexts and by interacting with race and class to amplify or attenuate structural advantages.

Before each empirical examination I pursued, I articulated precisely how contemporary residential and educational opportunity structures have transformed in ways that render parental skills and structural characteristics independently and interactively predictive of children's neighborhood and school conditions. These theoretical arguments turn heavily on three key themes: (1) increasing preferences for pursuing child-centered investments, especially among higher-income households and perhaps via access to more advantaged neighborhoods (Kornrich and Furstenberg 2013; Owens 2016); (2) the shifting nature of residential markets, whereby the enforcement of fair housing legislation, destruction of high-rise public housing, and restructuring of the brokerage industry (Ross and Turner 2005) have collided with the Information Age to saturate prospective renters and home buyers with choices and data; and (3) the liberalization of school assignment rules and proliferation of alternative options, like charter schools, which enables highly-motivated parents to send their children to non-assigned schools (Archbald 2004).

In each chapter, I use these theoretical arguments to develop a set of concrete hypotheses that I subsequently test using Los Angeles Family and Neighborhood Survey and Mixed Income Project data, which together follow a panel of households in Los Angeles County between 2000 and 2013. The datasets, when linked to administrative sources from the county and the California Department of Education and geospatial resources, paints a remarkably rich portrait of parental residential and educational decision-making in a vast, fragmented, and multiracial urban ecology where choices and data are rapidly expanding but racial hierarchies persist: dynamics that potentially amplify parental skills' direct and indirect effects on children's environmental conditions.

Across a diverse set of models characterizing neighborhood and school sorting, I find that parental cognitive skills and socioemotional health play important but previously underappreciated

roles in stratifying both contextual domains for children. The first chapter, which leveraged discrete choice models of residential sorting, suggests that parental cognitive skills interact with neighborhood socioeconomic status to predict neighborhood selection, even after testing and confirming the expected influences of race, income, spatial proximity, and housing markets. Moreover, highly-skilled upper/upper-middle class parents appear to sort specifically on the basis of average public school test scores rather than neighborhood socioeconomic status, broadly.

The second, third, and fourth chapters place school sorting rather than neighborhood sorting at their center. They show that 30 – 40% of Angelenos during the time period in question attended a non-neighborhood school and that these patterns are highly race- and class-stratified suggesting sociological research should pay additional attention to school sorting as a social process distinct from residential sorting. The second chapter proposes contextual sorting in general – and school sorting in particular – as an unexamined pathway linking parents' socioemotional health to their children's cognitive and socioemotional development. Congruent with this argument, I find that parents who are more likely to be depressed are less likely to engage in school choice (e.g., private, charter, magnet). These depression-based disparities are starkest among disadvantaged minority families and potentially contribute to black children of depressed parents attending schools that are lower-performing and more disadvantaged.

The third chapter also examines school sorting but shifts the focus from the most disadvantaged racial groups to the most advantaged and examines whether whites' and Asians' well-documented racial preferences to avoid Latinos and blacks are manifested through school sorting patterns in the suburbs. Prior literature focuses heavily on these dynamics within core-city districts, assuming perhaps that in the suburbs, schools are considerably whiter and non-traditional school

alternatives considerably sparser, so minority avoidance via school selection is less prevalent. However, I find that suburban schools in Los Angeles are actually remarkably diverse. Lacking the traditional magnet, charter, and private school escape hatches in close proximity, white and Asian parents living amongst high concentrations of blacks and Latinos often send their children to non-assigned traditional public schools far away that are whiter, but often poorer-performing, than the ones to which they were assigned.

The fourth and final chapter attempts to articulate, and adjudicate between, two theoretical accounts of contemporary school sorting that draw on the two traditions at the heart of this dissertation: structural sorting and intergenerational reproduction. I argue that the former tradition might posit that race and income play central roles in shaping who gains access to high-status school alternatives (e.g., private, magnet, and charter schools) due to spatial isolation from these school options, nontrivial resource constraints they impose, such as tuition and transportation costs, and institutional gatekeepers' biases for white and high-income students. I then articulate an additional account, drawing on the intergenerational reproduction literature, that implicates parents' educational attainment and cognitive skills and socioemotional health in shaping preferences for sending children far away to a highly-coveted school option and for conferring the institutional savvy and resilience to navigate a bureaucratically complex and often emotionally fraught selection process. I find strong support for the latter argument: parents' cognitive skills and socioemotional are the most consistently predictive factors of children's school status.

IMPLICATIONS FOR FUTURE RESEARCH

This dissertation's theoretical framework and empirical findings motivate contextual sorting and intergenerational reproduction scholars to reconsider some of their fundamental assumptions and to move toward theoretically integrating the two rich paradigms. Starting with the contextual sorting literature, this dissertation suggests the "big three" – racial preferences, resources, and discrimination – still loom large in contemporary residential and educational selection processes. Indeed, I found that race and resources were consistently predictive of neighborhood sorting. In terms of schools, racial preferences were so strong that even in a place where they could not easily be enacted – suburban school districts in Los Angeles County – white and Asian parents managed to realize them anyway. These patterns suggest structural sorting processes should remain central to sociological research, but in line with Krysan and Crowder (2017), the precise mechanisms by which race and resources operate need to be more thoroughly theorized and tested. My dissertation proposes an alternative to residential "white flight" and "minority avoidance" via core-city alternative school options: minority avoidance school enrollment patterns in the suburbs. Future work on structural sorting should consider the possibility that even when confronted with residential and educational opportunity structures not typically viewed as conducive to race- or-class based stratification, advantaged households find ways to separate themselves anyway. Leveraging fine-grained quantitative and especially qualitative data that spans multiple catchment zones and school districts – and ideally captures information on district enrollment policies – is crucial to revealing the subtle ways in which these processes operate and the rationales parents employ in pursuing rule-bending and rule-breaking behaviors.

However, race, resources, and discrimination do not tell the whole story of contextual sorting, as my three other dissertation chapters reveal. Enriching the contextual sorting literature with additional explanations of residential mobility is long overdue. Housing markets have transformed in important ways since the emergence of the neighborhood attainment literature, yet extant studies still do not adequately account for the roles played by information saturation (e.g., via emerging platforms like Zillow, Redfin, and NeighborhoodScout), choice-based housing policies, the enactment of fair housing laws, and the restructuring of the brokerage industry. I proposed, and generated evidence congruent with the possibility, that these dynamics stratify residential outcomes on the basis of parental cognitive skills and their school-based preferences. Future neighborhood attainment sorting studies should theorize why and examine whether skills may matter more among particular household types and within particular temporal and geographic contexts than others. Other explanations of residential sorting that relax the assumption of homogenous preferences for neighborhood socio-demographics and look beyond race, class, and household structure as drivers should be considered. Emerging administrative data on additional neighborhood characteristics ranging from environmental toxicity to crime to organizational resources should be leveraged to determine which types of households sort on which types of neighborhood features. Long-assumed patterns of race- and class-based residential sorting may be partially confounded by these factors.

The other key pivot this dissertation calls for is greater attention to school sorting as a socially-stratified process that is distinct from neighborhood sorting and that may implicate a different set of child-, parent-, and household-level factors. I found that 30 – 40% of Angeleno children attended a non-neighborhood school during the 2000s; this percentage likely increased during the 2010s. Moreover, recent evidence suggests schools stratify children's outcomes, even

among those residing within the same school district (Lloyd and Schachner 2020). Yet contextual sorting studies in sociology often assume neighborhoods and schools are a package deal; modeling the former is sufficient to explain socially-stratified patterns in the latter. This study reinforces other studies from sociology of education in suggesting this is no longer the case. However, whereas that literature examines contemporary school sorting primarily through the prism of race-based preferences ("minority avoidance"), this dissertation suggests parental cognitive skills and socioemotional health may also play a key role and should be probed further. Ideally, the contextual sorting literature will evolve from a myopic focus on neighborhood selection to a catholic orientation that examines selection into a wide range of environmental contexts – including schools and childcare settings – and develops an integrated theoretical framework for understanding socially-stratified selection into each.

As the contextual sorting literature develops this broader conceptualization of which contexts matter and which household- and individual-level factors shape selection into each, the intergenerational reproduction literature should update its models accordingly. The vast majority of studies within that tradition have focused on parenting practices and family conditions. However, a richer model of contextual sorting, such as that proposed here, promises to open up additional pathways by which parents' transmit skills and status to their children. Intergenerational reproduction scholars should take these pathways seriously and devote more research to examining how parents' educational attainment, cultural orientations, cognitive skills, and socioemotional health shape their preferences and constraints when it comes to selecting neighborhoods, schools, and childcare options for their children.

These developments will lay the groundwork for a research agenda devoted to understanding whether neighborhood, school, and childcare sorting processes mediate the intergenerational transmission of skills. These contexts are often perceived as moderators rather than mediators of intergenerational processes in stratification literature. But they are not exogenously determined, especially in an era of liberalizing housing markets and school enrollment regimes and choice-based policies. Causal mediation analyses will play a critical role in testing the proportion of the intergenerational correlation in skills explained by contextual sorting and whether and why this proportion varies across time and place.

LIMITATIONS AND EXTENSIONS

Although this dissertation provided an in-depth view of neighborhood and school sorting within one urban ecology during one temporal era, it is unclear how generalizable the findings are beyond Los Angeles County during the 2000s. It is possible that Los Angeles' neighborhood and school ecosystems uniquely privilege parental skills and socioemotional health due to their vast size, fragmentation, and complexity, while residential and educational sorting in other places does not accrue the same skill-based advantages. This is a testable proposition that future analyses leveraging nationally-representative data can test. Additional theorizing is needed to determine which metropolitan-level and temporal factors amplify or attenuate the roles of parental skills in shaping sorting versus the traditionally-emphasized race and resources.

The empirical strategies employed were also not without shortcomings. Future school sorting analyses should use the discrete choice model as a means of relaxing the assumption of homogenous preferences and incorporating a broader set of school-level factors (e.g., test scores,

geographic location, truancy rates) to predict selection. Contextual sorting studies will never lend themselves to experimental and quasi-experimental methods as well as contextual effect studies do. However, creative strategies that increase the plausibility of causal relationships between individual- and household-level factors and residential and educational selection should be deployed. For example, exogenous shocks to neighborhoods and schools in the form of catchment boundary changes, nearby charter openings, and district policy reforms might be leveraged to determine whether particular types of families disproportionately opt into or out of the affected residential and educational contexts.

Finally, the dissertation was incomplete in its treatment of potential forms of contextual sorting that may mediate the intergenerational transmission of skills, such as selection into childcare. Theories of skill development suggest childcare environments may be as, if not more, influential on children's long-term development than neighborhoods and schools. Yet I did not theorize or test which factors may lead families to select various types of childcare arrangements. Future work will need to place childcare sorting on an equal plane with neighborhood and school sorting. Clearly-articulated and well-substantiated theories of how sorting unfolds across each of these three domains will meaningfully enrich our understanding of intergenerational reproduction processes.

Appendix A – Skill-Based Contextual Sorting: Supplementary Analyses

TABLE A1

Sorting Effects of Respondent Attributes and Structural Tract Characteristics on Residential Choice among Movers, Conditional Logit Models (Person N = 129; Person-Years N = 205, Person-Year-Tract Alternatives N = 10,052)

	Model 1		Model 2		Model 3		Model 4	
Variables	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.
Destination tract attributes								
Network distance in miles from origin	0.794**	0.031	0.796**	0.031	0.796**	0.031	0.800**	0.030
# housing units (log)	2.467**	0.482	2.563**	0.490	2.571**	0.492	2.740**	0.563
% Owner-occupied	1.646**	0.237	1.686**	0.245	1.709**	0.245	1.621*	0.302
Tract status index	0.581	0.403	0.207*	0.145	0.185**	0.117	0.128**	0.095
% Latino							0.811	0.337
% Black							0.874	0.146
% Asian							1.101	0.159
Interaction of individual & tract attributes								
Age X Tract status index	1.013	0.016	1.002	0.015	0.997	0.013	0.998	0.014
Latino X Tract status index	0.369**	0.120	0.512*	0.133	0.554*	0.144	1.425	0.528
Black X Tract status index	0.391*	0.179	0.523	0.178	0.549	0.195	0.651	0.237
Asian X Tract status index	1.576	0.552	1.323	0.431	1.710	0.581	1.888	0.771
Latino X Tract % Latino							2.714*	1.050
Black X Tract % Black							1.556	0.479
Asian X Tract % Asian							2.048*	0.736
Household income Q2 X Tract status index			2.122*	0.761	2.166*	0.722	2.397*	0.865
Household income Q3 X Tract status index			2.767*	1.228	2.511*	1.028	2.600*	1.132
Household income Q4 X Tract status index			3.994**	1.734	3.411**	1.365	3.657**	1.615
Household income Q5 X Tract status index			4.748**	1.893	3.684**	1.363	4.233**	1.716
Bachelor's degree X Tract status index			1.628	0.427	1.695*	0.423	1.786*	0.469
Med. passage comp. X Tract status index					1.416	0.354	1.490	0.410
High passage comp. X Tract status index					1.727*	0.455	1.670	0.455

Notes

[a] Models include standardized measures of all census-derived tract-level variables, analytic weights based on L.A.FANS/MIP sampling procedures and attrition, and the offset term, $-\ln(q_{ijt})$, for sampling the choice set.

[b] Standard errors are clustered by persons.

[c] *$p < .05$, **$p < .01$ (two-tailed test).

TABLE A2

Sorting Effects of Respondent Attributes and Structural Tract Characteristics on Residential Choice with Continuous Operationalizations of Income and Skills, Conditional Logit Models (Person N = 284; Person-Years N = 3,317, Person-Year-Tract Alternatives N = 167,342)

	Model 1		Model 2		Model 3	
Variables	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.
Destination tract attributes						
Origin tract	1908.464**	493.698	1920.775**	496.442	1916.129**	493.963
Network distance in miles from origin	0.802**	0.030	0.801**	0.030	0.802**	0.030
# housing units (log)	1.887**	0.232	1.890**	0.233	1.881**	0.233
% Owner-occupied	1.426**	0.170	1.431**	0.168	1.423**	0.171
Tract status index	1.004	0.593	0.659	0.416	1.177	0.718
% Latino	0.866	0.219	0.865	0.216	0.857	0.217
% Black	0.852	0.095	0.847	0.093	0.854	0.095
% Asian	1.123	0.105	1.109	0.103	1.122	0.105
Interaction of individual & tract attributes						
Age X Tract status index	0.987	0.010	0.989	0.011	0.989	0.010
Latino X Tract status index	1.098	0.287	1.081	0.287	1.109	0.290
Black X Tract status index	0.695	0.172	0.649	0.163	0.692	0.173
Asian X Tract status index	1.934	0.740	1.868	0.686	1.918	0.747
Latino X Tract % Latino	1.981**	0.481	1.924**	0.474	1.991**	0.487
Black X Tract % Black	1.438*	0.248	1.446*	0.252	1.434*	0.250
Asian X Tract % Asian	1.137	0.312	1.147	0.315	1.147	0.316
Household income (logged)	1.585**	0.158			1.602**	0.166
Household income Q2 X Tract status index			1.202	0.254		
Household income Q3 X Tract status index			1.293	0.305		
Household income Q4 X Tract status index			2.128**	0.487		
Household income Q5 X Tract status index			3.074**	1.032		
Bachelor's degree X Tract status index	1.055	0.283	1.047	0.306	1.057	0.286
Passage comp. percentile X Tract status index			1.194**	0.076	1.190**	0.079
Med. passage comp. X Tract status index	1.237	0.240				
High passage comp. X Tract status index	1.693*	0.369				

Notes

[a] Models include standardized measures of all census-derived tract-level variables, analytic weights based on L.A.FANS/MIP sampling procedures and attrition, and the offset term, $-\ln(q_{ijt})$, for sampling the choice set.

[b] Standard errors are clustered by persons.

[c] $*p < .05$, $**p < .01$ (two-tailed test).

TABLE A3

Sorting Effects of Respondent Attributes and Structural Tract Characteristics on Residential Choice by Household Structure, Conditional Logit Models

	Model 1 Primary Caregivers Residing with Parents		Model 2 No Children (<18) in Household		Model 3 Elementary-Aged (<12) Children in Household	
Variables	O.R.	S.E.	O.R.	S.E.	O.R.	S.E.
Destination tract attributes						
Origin tract	493.785**	278.331	1364.113**	754.626	1192.685**	483.027
Network distance in miles from origin	0.566**	0.086	0.674**	0.054	0.767**	0.054
# housing units (log)	2.490**	0.697	3.019**	0.909	1.774**	0.345
% Owner-occupied	1.177	0.674	2.686**	0.988	1.285	0.218
Tract status index	0.869	1.617	0.512	0.844	1.080	0.759
% Latino	0.844	0.886	0.179*	0.132	1.458	0.412
% Black	0.964	0.427	0.414*	0.114	0.966	0.125
% Asian	1.423	0.531	0.693	0.227	1.195	0.121
Interaction of individual & tract attributes						
Age X Tract status index	1.011	0.025	0.946	0.030	0.980	0.013
Latino X Tract status index	0.721	0.787	2.892	1.818	0.807	0.266
Black X Tract status index	0.138**	0.090	0.316*	0.185	1.119	0.362
Asian X Tract status index	1.000	1.151	1.137	0.576	1.715	0.617
Latino X Tract % Latino	2.351	2.225	5.646*	4.214	1.167	0.400
Black X Tract % Black	1.729	0.534	2.747*	1.232	1.240	0.145
Asian X Tract % Asian	0.648	0.529	0.581	0.367	1.478	0.345
Household income Q2 X Tract status index	1.898	1.010	1.072	0.756	0.973	0.257
Household income Q3 X Tract status index	1.347	1.662	0.641	0.794	1.481	0.442
Household income Q4 X Tract status index	4.753**	2.711	2.059	1.739	2.111*	0.648
Household income Q5 X Tract status index	26.459**	18.856	5.363*	4.072	3.425**	1.520
Bachelor's degree X Tract status index	0.245	0.190	2.592	1.351	0.693	0.232
Med. passage comp. X Tract status index	0.391	0.211	1.022	0.456	1.526*	0.320
High passage comp. X Tract status index	0.356	0.226	1.086	0.605	1.946**	0.482
Observations						
Number of persons	30		48		117	
Number of person-years	353		563		1,365	
Number of person-year-tract alternatives	17,798		28,435		68,864	

Notes

[a] Models include standardized measures of all census-derived tract-level variables, analytic weights based on L.A.FANS/MIP sampling procedures and attrition, and the offset term, $-\ln(q_{ijt})$, for sampling the choice set. [b] Standard errors are clustered by persons. [c] $*p < .05$, $**p < .01$ (two-tailed test)

Appendix B

Skill-Based Contextual Sorting: Methodological Appendix

Analytic Sample

300 respondents were designated as primary caregivers (PCGs) at wave 1 and confirmed both to have resided within L.A. County and to have completed a survey during each of the three waves of data collection (i.e., waves 1 and 2 of L.A.FANS and MIP). Fifteen lacked Woodcock-Johnson Passage Comprehension scores and one additional respondent was dropped because s/he resided in a sparsely-populated, unincorporated portion of the Santa Clarita Valley within L.A. County that ArcGIS software could not locate for the purpose of calculating network distance to other potential neighborhood destinations.

We exclude year 2000 residential data from our analyses because origin tract identifiers are missing for nearly 15 percent of the analytic sample (i.e., tract of residence in year 1999). As described in the text, all models include a dummy variable indicating whether the selected tract is the origin tract. A high rate of missing data on this variable may yield imprecise, if not biased, estimates. We exclude year 2013 from our analyses because only a small portion of respondents completed the MIP survey in this year; the vast majority completed the MIP survey in 2011 or 2012.

As with any longitudinal survey, the bias generated by panel attrition must be addressed. We model the probability that PCGs exited the survey based on a range of individual- and household-level variables. See Sastry and Pebley (2010), Peterson et al. (2012), and Sampson, Schachner, and Mare (2017) for details on the attrition models used for attrition between waves 1 and 2 and between waves 2 and MIP. We weight all individual-level data based on the product of the inverse probability of attrition between waves 1 and 2 and waves 2 and 3, as well as sampling weights that adjust for L.A.FANS' original sampling design.

These specifications produce our analytic sample of 284 PCGs, most of whom have continuous census tract-coded residential history data (in 2000 boundaries) throughout the 2001-2012 timeframe. If all 284 of these PCGs had continuous residential history data, 3,408 person-years (284 * 12) would be available for analysis. However, we remove person-years that lack valid GIS-coded census tracts and that entail moving out of L.A. County, into L.A. County from outside the county, or into a census tract for which network distance cannot be calculated by ArcGIS software, which reduces the analytic sample slightly, to 3,317 person-years of residential mobility data (97% of total). The residential history data span 2001 to 2012 and contain geocoded census tracts (based on household location as of January 1st of each year), enabling us to integrate annual estimates of tract-level data using U.S. census 2000 data and American Community Survey (ACS) 2004 – 2008 through 2011 – 2015 data, administrative data provided by state and local governments, and GIS data into our dataset. Note that because the Census Bureau redraws tracts every decade, a standardized set of tract boundaries is required for any analyses that cross the decade threshold. Thus, we standardize all our tract-level data to 2000 census-defined boundaries, given that this was the first year of the L.A.FANS survey. To standardize data from the 2010-2014 and 2011-2015 ACS, which employed 2010 tract boundaries, we use the Backwards Longitudinal Tract Data Base's interpolation code (Logan, Xu, and Stults 2014).

Calculating Tract-level Estimates of K-12 Test Scores

Beyond the tract status index, our other core neighborhood-level measure is an annual estimate of *K-12 public school test scores.* As we mention in the text, scholarly consensus regarding how to calculate

neighborhood-level measures of local public school test scores remains elusive. We develop a measure based on census tract boundaries, Los Angeles County-provided school catchment boundaries, and public school test score data from the California Department of Education. The educational accountability movement, which gained strength in the late 1990s, spurred the California Department of Education to calculate a school-level measure of average student achievement levels based on state test scores across multiple content areas, termed the Academic Performance Index (API), for every campus with eleven or more valid scores, every year between 1998 and 2013. The school API is calculated on a standardized scale of 200 to 1000 for the entire school, as well as disaggregated by students' race-ethnicity and socioeconomic status. These scores are publicly disclosed via the Internet and newspapers, rendering them accessible to parents and the public.

We aggregate local public schools' average API scores, reflecting all valid student test results, up to the neighborhood level by overlaying school catchment boundaries provided by Los Angeles County in 2002 with 2000 census tract boundaries via a GIS spatial merge. Given that catchment boundaries do not perfectly align with 2000 census tract boundaries, we estimate the spatial portion of each tract that is covered by each school's catchment boundaries that intersect the tract, which generates a relative weight for each school's test scores. Then, separately for all elementary, middle, and high schools, we generate a spatially-weighted tract-level measure of local schools' average test scores. Finally, we calculate a simple average of the separate elementary, middle, and high school-based API tract measures to create an aggregate K-12 test score measure for each Los Angeles County census tract that varies each year between 2001 and 2012.

Modeling the Choice Set

Whether the choice sets employed in discrete choice analyses of residential selection should include the tract chosen in the prior period (t -1) – i.e., the origin tract – remains contested among residential mobility scholars. Inclusion or exclusion of the origin tract indicator determines whether the residential histories of households that remain in place during a given time period ("stayers") will be analyzed or if only movers' behavior will be examined. The discrete choice models of Spring et al. (2017) and Quillian (2015) incorporate only time periods in which a household moves and consequently exclude the origin tract from the choice set. However, Bruch and Mare (2012) provide a compelling argument for including it, which enables the decisions of (1) whether to move or stay and of (2) where to move to be modeled simultaneously rather than as a two-step process requiring two separate models. The latter strategy is employed by several residential mobility studies to examine selection into mobility and then neighborhood sorting predictors, conditional on moving (e.g., Crowder, South, and Chavez 2006; Spring et al. 2017).

Incorporating the origin tract indicator is not only a more streamlined approach that combines two separate behavioral models into one. It also accounts for the fact that the decision to stay in place is a common and theoretically important outcome that is partly determined by the characteristics of both one's current neighborhood and of other available neighborhood options (Bruch and Mare 2012). Sampson and Sharkey (2008) reinforce the importance of attending to stayers' patterns: "Choosing to remain in a changing or even declining neighborhood is a form of selection, after all, and can be just as consequential as the decision to relocate, an often overlooked point in debates about neighborhood effects."

We agree with their assessments, particularly given our theoretical questions and the ecological and temporal context in question. Theoretically salient features of L.A. neighborhoods meaningfully changed around stayers between 2001 and 2012 – a period marked by an immigration-fueled shift in the race-ethnic composition of the region, the exogenous shock of the Great Recession, volatile housing prices, a precipitous drop in crime, and the enactment of major reforms to local school systems. To the extent these changes meaningfully affect the conditions of origin neighborhoods and potential destinations, preserving stayers' residential histories and including the origin tract in the choice set is critical to acquiring a fuller picture of residential sorting in this spatial and temporal context and to mitigating potential bias generated by only tracking a strongly-selected group (i.e., movers).

Moreover, practically speaking, including the origin tract indicator enables interactions between moving/staying behavior and individual-, household-, and neighborhood-level features to be included in discrete choice models. These interactions can be interpreted as suggesting whether certain characteristics suppress or amplify the likelihood of moving out of one's origin neighborhood. It is also worth noting that because 94 percent of our analytic sample's person-years of residential history data consist of staying in place, rather than moving, we would lose a substantial amount of statistical power if we focused exclusively on movers.

For all of these reasons, we decide to include respondents who remained within the same census tract in a given year in our core analytic sample, and use the origin tract indicator to distinguish between the stayers and movers. Importantly, all models' core results are robust to origin tract indicator interactions with our core neighborhood-level measures of interest (i.e., tract status index and K-12 test scores) and core individual/household level measures of interest (i.e., household

income quintile and cognitive skills). Moreover, the results from our most complete model (Model 4, Table 5) are replicated with an analytic sample that consists solely of respondents who moved within a given year (Appendix A: Table A1). Unfortunately, Model 1, Table 6 contains too small of an analytic sample to replicate results within a mover-only analytic sample, but our descriptive analysis of recent movers' stated preferences (Figure 3) suggests that the model's core findings plausibly hold when only movers' behaviors are examined.

Another important feature of the choice set beyond inclusion or exclusion of the origin tract is which non-selected tracts to include for each respondent. Prior discrete choice models typically conceptualize the choice set of non-selected tracts as every non-origin tract in a metropolitan area, given that households are far more likely than not to move within these geographic parameters (e.g., Bruch and Mare 2012; Quillian 2015; Spring et al. 2017). However, the computational intensity of constructing a choice set with over 2,000 county tract options, theoretical considerations regarding "importance sampling" (Bruch and Mare 2012; Spring et al. 2017), as well as emerging evidence suggesting that individuals generally consider only a small set of nearby neighborhoods options (Bruch and Swait 2019; Krysan and Crowder 2017) and that Angelenos' actual residential moves are highly geographically circumscribed (Sampson et al. 2017) lead us to take a different tack. Based on a review of schematic maps from various Los Angeles County government agencies and of the crowd-sourced Mapping L.A. project overseen by the *Los Angeles Times*, we assign all county tracts to one of eight geographic regions – Central Los Angeles, San Fernando Valley, San Gabriel Valley, Gateway Cities, South Bay, Westside Cities, Santa Clarita Valley, and Antelope Valley – and use these regions to structure construction of respondents' choice sets. These regions are widely recognized as distinct sectors among locals, and Angelenos are likely to have a greater degree of familiarity with other

neighborhoods within their region of residence than in other regions of the sprawling county (Bruch and Swait 2019). In fact, our data reveal a very high degree of within-, versus between-, region residential sorting, even among mobile households. As Figure 1 shows, between waves 1 and 3 of L.A.FANS-MIP, the two outlying regions retained fully 100% of randomly selected adults and two retained over 90%. Central L.A.'s retention rate is slightly lower, but still high at 70%.

Given this strong pattern, for each person-year combination we construct a circumscribed choice set of tract options, consisting of the tract selected; the tract within which the person resided during the prior year (i.e., the origin tract, which may or may not be the same as the tract selected); and 49 to 50 randomly-sampled non-selected, non-origin tracts, about half of which are drawn from the county region in which the respondent resided in the prior year, and about half from the entire county as a whole.

To ensure each county tract's probability of selection into the choice set as a non-selected, non-origin tract is consistent across all person-years, we construct the choice set in a slightly distinct way based on one of the following three scenarios. In scenario 1, the selected tract is the same as the origin tract (i.e., the individual stayed in place) during a given year and we add 25 non-selected tracts randomly drawn from the stayer's county region and 25 randomly drawn from the county as a whole, yielding a total choice set of 51. The remaining two scenarios capture two types of moves: to a tract lying within the same county region as the origin tract (scenario 2) or to a tract outside of the origin tract's region (scenario 3). In the former scenario, we only draw 24 additional choice set tracts from the region-specific sample because the selected tract is also within the same region, ensuring the total within-region options equals 25. We then add 25 tracts drawn from the county as a whole. The final scenario refers to moves outside the origin tract's county region. In these cases, we count

the selected tract as one of 25 choice set tracts drawn from the county as a whole and draw 24 additional tracts from this stratum. 25 tracts are drawn from the region of the origin tract. There are 158,712 person-period-tract alternatives within scenario 1 (3,112 person-periods * 51 tract options) and 10,250 person-period-tract alternatives (205 person-periods * 50 tract options) within scenarios 2 and 3, for a total of 168,962 person-period-tract alternatives. Note that the total number of person-period-tract alternatives included in our analytic sample is slightly lower (*N*=167,342) due to missing data on certain tract variables.

To account for sampling the tract choice set, Bruch and Mare (2012) argue that it is necessary to include an offset term, q, that differentially weights tract options based on the probability of the tract entering the circumscribed choice set for a given person-year. Following this guidance, Quillian (2015) and Spring et al. (2017) assign q a value of 1 for all selected tracts, given their automatic inclusion in respondents' choice set. All other tracts receive a value equal to the number of non-selected tracts within the choice set divided by the total number of non-selected tract options within the relevant sampling frame. Jarvis (2018), however, argues that employing a simple random sample to generate the choice set, as these studies do, obviates the need for an offset term and can actually generate biased coefficient estimates.

Because we instead apply a stratified random sample using county regions, rather than a simple random sample, an offset term is required. Based on Jarvis' guidance, we assign q a value of 1 for all origin tracts but assign selected, non-origin tracts a value equal to what q would be if it were any other tract within the choice set. If the selected, non-origin tract or the non-selected tract is located within the origin region sample stratum, then it is assigned a q value equal to 25 divided by the total number of tracts within that region (q = 0.06 – 0.43). If the tract is drawn from the full

countywide sampling frame, then it is assigned a q value equal to 25 divided by the total number of tracts within the county (0.01). The final offset term is calculated by applying a natural log transformation to the q values and multiplying them by -1, per Bruch and Mare (2012). Our models' core results are robust to excluding the offset term.

The Independence of Irrelevant Alternatives

Quillian (2015) and Bruch and Mare (2012) note that a key assumption underlying conditional logit models is that the odds ratios between any two options within the choice set will remain the same magnitude, regardless of whether a third option is added to, or removed from, the choice set. The implication of this assumption – commonly referred to as the independence of irrelevant alternatives (IIA) – is that reconstructing a given choice set by increasing/decreasing the number of options and/or by replacing certain options with other alternatives should generate model estimates that are consistent in magnitude and therefore valid predictions of selection behavior.

Quillian (2015) warns that widely employed tests of IIA produce contradictory results and simulation analyses discourage their use. Despite the lack of consensus on what tests to use and whether the test results uphold or violate the IIA assumption, Train (2009) finds that conditional logit model coefficients accurately reflect average effects of options' characteristics on the probability of selection, regardless of whether IIA holds – a conclusion he draws by comparing estimates generated by conditional logit and mixed logit models, the latter of which is not predicated on the IIA assumption. Thus, despite the aforementioned concerns, Quillian (2015) and Bruch and Mare (2012) argue that conditional logit models remain useful in characterizing, or at least approximating, neighborhood sorting processes.

Until better tests of IIA are developed, Quillian (2015) and Bruch and Mare (2012) advise discrete choice analysts to hedge against the concern by (1) specifying their models as fully as possible, (2) acknowledging that results may shift based on how the choice set is constructed, and (3) refraining from extrapolating results to other ecological and temporal contexts. In this study, we address (1) by adding important predictors that several past discrete choice analyses of neighborhood sorting have missed (e.g., network distance of potential destination tracts from origin tract, individuals' cognitive skills, neighborhood K-12 school quality). As for (2), we develop plausible choice sets for every respondent in an innovative way that is both theoretically and empirically informed (see Bruch and Swait (2019) for another strategy of constructing choice sets that capture "cognitively plausible" outcomes). Lastly, with regard to (3), we repeatedly clarify that our results are particular to Los Angeles County during the time period in question.

Educational Expectations and Extracurricular Investments

L.A.FANS captures proxies for educational expectations and investments for about 90% of our analytic sample. To evaluate *educational expectations,* we use the following question from the L.A. FANS Parent questionnaire fielded in waves 1 and/or 2: "What amount of schooling do you expect your child [i.e., the L.A.FANS randomly selected child or sibling] to complete?" The variable ranges from 0 to 20, with 0 to 12 capturing the number of years of K-12 schooling the parent expects the child to complete and 13 to 20 capturing enrollment in, or completion of, vocational school, college, or a graduate/professional degree program. Thus, higher values are associated with higher educational expectations among parents.

As a proxy for the amount of *extracurricular investment* devoted by analytic sample parents to their children, we count how many of the following activities the parent reported her L.A.FANS child respondent(s) participates in at waves 1 and/or 2: sports teams, sports lessons, music lessons, music group, drama/arts club, game-related club, student government, hobby-related club, outdoor activity club, drill team/cheerleading, scouts, church youth group, religious study, boys/girls club, police athletic league, YMCA/YWCA, and volunteer activities. This variable theoretically ranges from 0 (the parent's child does not participate in any of the listed activities) to 17 (the child participates in all of the listed activities). We recognize that this measure conceptualizes investment in broad – not merely financial – terms. Indeed, several of the activities are based within the school context and may not require any direct parental payments. However, we believe that many activities, even if based in a public school, require nontrivial financial investment (e.g., team uniforms, dues, materials, field trip expenses) and non-financial parental investments (e.g., time spent on transport, game/recital attendance). Therefore our measure gauges the degree to which the parent invests in the child's enrichment. This conceptualization is congruent with how Annette Lareau and other concerted cultivation scholars describe engaged parenting.

If the primary caregiver completes the educational expectation question or activity list for multiple children (i.e., the randomly selected child and sibling respondent) and/or during multiple waves of data collection, we create a pooled average of all of their responses to proxy their overall expectations and investment in all of their children over the course of the panel. There are a maximum of four available responses to the educational expectation question and activity list for each parent respondent (i.e., one for the randomly selected child and one for the sibling respondent during both waves 1 and 2) that can be averaged to create each of the two measures.

For the ~10% of analytic sample parents lacking any available data across waves for the educational expectations and extracurricular investment constructs, we use imputation models to estimate the measures in order to preserve our already-limited statistical power and facilitate mediation-type analyses for an identical analytic sample. The imputation models use OLS to predict educational expectations and extracurricular investments as a function of the parent's race, class, gender, age, income, homeownership, educational attainment, household structure, and socioemotional health (i.e., proxies for self-efficacy and likelihood of depression).

For educational expectations, our person-year analytic sample exhibits a mean of 16.8 years of schooling (~a bachelor's degree), with an S.D. of 2.07 and a range of 10.5 years to 20 years (~a graduate school degree). For extracurricular investments, our person-year analytic sample exhibits a mean of 1.05 activities with an S.D. of 1.12 and a range of 0 to 5 activities. Both sets of descriptives are based on imputed and nonimputed values.

Appendix C

Racial Stratification and School Segregation in the Suburbs: Methodological Appendix

Calculating Tract-level Estimates of Local Public School Racial Composition

A key predictor I use to assess minority avoidance school enrollment patterns is the *percentage of students who are black or Latino* within each child's local public schools. Because my data do not definitively identify each child's catchment-assigned public school, I develop a tract-level estimate of % black/Latino students in the traditional public schools whose catchment boundaries intersect the tract. This estimate is based on census tract boundaries, Los Angeles County-provided school catchment boundaries, and demographic data from the California Department of Education's Academic Performance Index (API) reporting system, which tracks demographic and test score data for every public school campus with eleven or more valid scores, every year between 1998 and 2013.

I aggregate local public schools' racial composition from API reports (2001 data for analytic sample child-years drawn from wave 1, 2007 data for child-years drawn from wave 2), reflecting all valid student data, up to the neighborhood level by overlaying school catchment boundaries provided by Los Angeles County in 2002 with 2000 census tract boundaries via a GIS spatial merge. Given that catchment boundaries do not perfectly align with 2000 census tract boundaries, I estimate the spatial portion of each tract that is covered by each school's catchment boundaries that intersect the tract, which generates a relative weight for each school's test scores. Then, separately for all elementary, middle, and high schools, I generate a spatially-weighted tract-level measure of local public schools' % black and Latino composition. Finally, I calculate a simple average of the

separate elementary, middle, and high school-based disadvantaged minority composition tract-level measures to create an aggregate measure for each Los Angeles County census tract.

Calculating Tract-level Estimates of Socioeconomic Composition and Test Scores

I employ the same data sources and procedures described above to generate a tract-level estimate for the percentage of students who qualify for free or reduced-price lunch and test score-based performance of each analytic sample child's local public schools. The free or reduced-price lunch measure is straightforward and drawn directly from API reports (2001 data for wave 1 child-years and 2007 data for wave 2 child-years) for each school whose catchment boundaries intersect a child's census tract of residence. As noted above, each school's free or reduced-price lunch eligibility percentage is spatially weighted separately by elementary, middle, and high school and then averaged across these three school levels to generate one tract-level proxy for local public schools' socioeconomic composition.

The tract-level measure of local public schools' test score performance uses the same spatial weighting system described above but leverages the API reporting system's Similar Schools Ranking rather than the sociodemographic data. The foundation of the Similar Schools Ranking was the API score assigned to every public school campus with eleven or more valid test scores, every year between 1998 and 2013. A schoolwide API score, ranging from a low of 200 to a high of 1000, was generated based on all students' *levels* of performance on standardized tests (aggregated across reading, math, and other subjects). The California Department of Education reported this score as an "absolute" measure and also generated two types of statewide "relative" rankings based on it: (1) API Statewide Rank and (2) API Similar Schools Ranking. The API Statewide Rank merely ranked

all schools of the same level (e.g., elementary, middle/junior, high) in the entire state and assigned each school a decile (1-10) based on this ranking, with 10 indicating the school scored in the top 10% of all state schools. Instead of ranking all schools in the entire state relative to each other, the API Similar Schools Ranking attempted to only rank the API scores of schools relative to other schools with *similar socio-demographic characteristics*. Although the methodology for calculating the peer group against which each school would be ranked for its 1-10 Similar Schools Ranking is complex, the main intuition is that this ranking operated as a kind of value-added measure that attempted to isolate school performance from the influence of race and class composition differences across campuses that could explain why some schools performed better than others. See the 2011-12 Academic Performance Index Reports Information Guide (pages 57 – 61: https://edsource.org/wp-content/uploads/old/API-explanation20121.pdf) for more details on the methodology underlying the Similar Schools Ranking

I use this score as my core proxy for local public school academic quality rather than raw API score (200 – 1000) or the Statewide Schools Ranking because its decile construction is more intuitively interpretable than the former and because it is, by design, less highly correlated with schools' racial composition than either of the other two rankings. This latter feature reduces multicollinearity concerns associated with including local public schools' racial composition and academic quality proxy in the same model. Also note that the Similar Schools Ranking, like the other two measures, is publicly disclosed via the Internet and newspapers, rendering them accessible to parents and the public. For savvy parents seeking to maximize academic quality it is this particular value-added type ranking that should, in theory, drive their school enrollment decisions.

Spatial Fixed Effects Capturing School Choice Sets

Several school sorting studies address this concern by controlling for the density of non-traditional public school options (e.g., magnets, charters, and privates) within a short radius of the home (e.g., 2 miles) (e.g., Candipan 2020). I opt for a different tack for two key reasons. First, a core premise of my theoretical framework is that advantaged suburban parents disproportionately opt for *traditional* public schools outside of their catchment zone (Hypothesis #2). Thus, the availability of non-traditional school options may not be relevant to their decision. Second, it is very difficult to establish an appropriate distance threshold to capture plausible school choice sets in this vast and varied county. In the densest portions of the county, parents are only likely to enroll their students in schools within a mile or two of their homes; in the sparsest portions, it is customary to send students ten miles away.

I choose instead to include spatial fixed effects capturing which of the eight *county regions* the child's census tract is located within: Central Los Angeles, San Fernando Valley, San Gabriel Valley, Gateway Cities, South Bay, Westside Cities, Santa Clarita Valley, and Antelope Valley. These regions are geocoded based on schematic maps from various Los Angeles County government agencies and of the crowd-sourced Mapping L.A. project overseen by the *Los Angeles Times*. They are widely recognized as distinct sectors among locals, and Angelenos are likely to have a greater degree of familiarity with schools within their region of residence than in other regions of the sprawling county (Bruch and Swait 2018; Schachner and Sampson 2020).

Descriptive analyses gauging whether analytic sample children were sent to schools within their county region of residence or to another county region reinforce this intuition. Over 90% of children attend public or private schools *within* their county region of residence, suggesting the

county region accurately capture the plausible school choice sets parents consider. I run robustness checks that replace these county region fixed effects with school district fixed effects, but these boundaries are more porous when it comes to school sorting; 86% of children cross district boundaries to attend school due, in large part, to private school students crossing district boundaries.

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