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Racial disparities in the pattern of intergenerational neighbourhood mobility

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Abstract

Neighbourhood context is known to shape one's life chances, but much of neighbourhood disadvantage is passed down from parents to children. The gap in social and economic achievements between Black and White families in the United States may partially be explained by differences in the intergenerational transmission of neighbourhood context. Using census tract socio-economic data, we created a national ranking of US census tracts. We then examined intergenerational neighbourhood mobility using 2828 parent–child pairs from a longitudinal household survey. We found that White children, compared with Black children, were more likely to inherit higher neighbourhood ranks from their parents. Income and education had smaller negative effects on neighbourhood rank for White children than Black children, all other things equal. Black children whose parents were in the bottom 25th percentile neighbourhood rank tended to move up in neighbourhood rank. But by much smaller magnitudes than their White counterparts. Our findings indicate that different patterns of intergenerational neighbourhood mobility between White and Black families may be an important factor for persisting racial disparities in the neighbourhood context.

摘要

众所周知, 街区环境会影响一个人的生活机会, 但大部分街区贫困都是由父母传给孩子的。美国黑人和白人家庭在社会和经济成就上的差距可部分通过街区环境代际传递中的种族差异来解释。我们利用人口普查区的社会经济数据, 创建了美国人口普查区的全国排名。 然后, 我们使用来自纵向家庭调查的 2828 对父母-子女研究代际街区流动性。 我们发现, 与黑人儿童相比, 白人儿童更有可能从父母那里继承更高的街区等级。 与黑人儿童相比, 较低的收入和教育对白人儿童的街区等级产生的负面影响较小。 父母的街区排名处于最末四分之一的黑人儿童往往会上升, 但上升幅度比白人儿童要小得多。 我们的研究结果表明, 白人和黑人家庭之间代际街区流动的不同规律可能是街区背景种族差异持续存在的一个重要因素。

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Keywords

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Introduction

Neighbourhood context affects individuals' life chances, contributing to differential socio-economic achievements, health and wellbeing outcomes (Galster and Santiago, 2017; Jargowsky, 1997; Newburger et al., 2011; Wilson, 1987). Furthermore, one's neighbourhood conditions affect not only those currently residing in them, but also their children's outcomes (Black and Devereux, 2011; Blau and Duncan, 1967; Coley et al., 2019; Manley et al., 2020; Sharkey, 2013). Although there have been debates concerning whether parents' neighbourhood context simply reflects parents' socio-economic position, the evidence seems to indicate that the parent's place itself affects the child's socio-economic mobility later in life (Chetty and Hendren, 2018; Chetty et al., 2016; Hedman and Van Ham, 2021; Rothwell and Massey, 2015; Sampson, 2012; Sharkey, 2013).

The 'stickiness' of neighbourhood context across generations may be one of the mechanisms of persisting racial residential stratification and concentration of disadvantage. Compared with White families, Black families are more likely to experience persistent exposure to neighbourhood disadvantage. This long-term exposure to disadvantage has distinctly negative effects (Bane and Ellwood, 1986; de Souza Briggs and Keys, 2009; McDonough et al., 2005). One of the reasons for such racialised exposure to neighbourhood disadvantage is the long history of racial residential segregation and increasing income segregation in recent years (Loh et al., 2020). This has produced vastly uneven residential conditions, such as access to services, environmental hazards, violence and safety. Racial inequality between Black and White families is further amplified by the transmission of existing neighbourhood disadvantage across generations (Sampson, 2008; Sharkey and Elwert, 2011; Wodtke et al., 2012). Furthermore, the pattern of intergenerational neighbourhood mobility differs by race/ethnicity (Crowder et al., 2011; Pais et al., 2012). While people tend to move to wealthier and whiter neighbourhoods as they accumulate wealth, the pattern of residential mobility for Black people is affected more by racial prejudice and discrimination than by income and wealth (Iceland and Wilkes, 2006; Logan and Brian, 2010; Timberlake and Iceland, 2007). In addition, the effect of parental exposure to neighbourhood disadvantage on a child's neighbourhood attainment seems to be stronger for Black families than White families (Pais, 2017).

While it is clear that neighbourhood context transmits from one generation to the next, differences in the direction and magnitude of intergenerational transmission of neighbourhood disadvantage between White and Black families need further examination. Furthermore, how children's income and education mediate the effect of their parents' neighbourhood disadvantage on neighbourhood mobility requires additional inquiry. To address these gaps in current literature, we examine the pattern of neighbourhood mobility between parent–child pairs of White and Black families, while paying particular attention to the strengths of intergenerational transmission of neighbourhood quality by race. We also

investigate the contribution of parent and child income and education on determining the child's neighbourhood in adulthood.

Literature review

Inherited neighbourhood context has been documented in the United States (US) and elsewhere. For example, using data covering 25 years of the Swedish population, Hedman and Van Ham (2021) documented strong intergenerational correlations in neighbourhood position over three generations (Hedman and Van Ham, 2021). This finding showed that intergenerational transmission of neighbourhood conditions still exists even in relatively homogeneous and egalitarian societies such as Sweden. However, the magnitude of intergenerational transmission of disadvantage may differ by type of social system. Interestingly, Howell (2019) found that the neighbourhood effect on income mobility is twice as high in the US as in Germany (Howell, 2019). Controlling for parental neighbourhood socio-economic conditions, however, neighbourhood effects on a child's income in adulthood were reduced 33% in the US, while there was a 6% reduction in Germany. The author concluded that the first generation's race and educational attainment were important in determining the child's neighbourhood location and income mobility in the US. These findings imply that the unique social organisation in the US may produce racial and economic segregation patterns; and that systemic inequity contributes to persistent segregation and generational disadvantage (Howell and Korver-Glenn, 2018; Jackson, 1985; Krysan and Crowder, 2017). On the other hand, European social democratic policies may benefit all residents (Esping-Andersen, 1990).

Although studies document the effects of the neighbourhood in early childhood on neighbourhood conditions in later life, whether and how the family context and neighbourhood conditions contribute to determining one's adulthood neighbourhood context has not been fully explored (Pearce, 2018). Interestingly, Manley et al. (2020) documented that among more than 49,000 Swedish sibling pairs, the family socio-economic position was a stronger determinant, compared to childhood neighbourhood context, for siblings' adulthood neighbourhood conditions (Manley et al., 2020). However, both siblings shared the same family socio-economic position, and childhood neighbourhood context continued to influence siblings' neighbourhood into their adulthood. This finding confirms that intergenerational transmission of neighbourhood context has a spatial dimension beyond family socio-economic conditions that contribute to the child's neighbourhood in their adulthood.

Despite educational and income achievements, racial/ethnic minorities continue to experience economic inequality in the US (Ryabov, 2020). Existing racial/ethnic disparity is partially due to neighbourhood context, which results in behavioural patterns. Ryabov described Black and White differences in the pattern of the intergenerational neighbourhood mobility, in relation to a child's income and education, using national longitudinal data from the National Longitudinal Study of Adolescent to Adult Health (Ryabov, 2020). The findings indicated that Black and Hispanic children are less likely to surpass their parents' levels of education, income and occupational prestige than Asian and White children. In addition, racial/ethnic differences in the intergenerational transmission of socio-

economic status are attenuated but not fully explained by neighbourhood-level indicators. Similarly, longitudinal data from the Netherlands showed that educational attainments may interrupt intergenerational patterns of neighbourhood disadvantage (de Vuijst et al., 2017). However, the findings further showed that the positive effect of education mitigating parental neighbourhood effects on children's neighbourhood outcomes was weaker for non-Western than for native Dutch individuals. The authors suggested that non-Western minorities are often exposed to deprived neighbourhood conditions, despite the improvement of their socio-economic conditions. On the other hand, using 4590 Norwegian twin pairs and their parents, Hovde Lyngstad et al. (2017) showed that parents' education did not significantly affect the educational attainments of their children. The authors argued that education is highly accessible to all in Norway, and within such context, parental education did not seem to influence children's educational attainments.

The long history of racial residential segregation in the US and increasing income segregation in recent years have produced vastly uneven residential conditions within which different groups are exposed to different levels of poverty and affluence, access to services, environmental hazards, violence and safety. Scholars have theorised that racial/ethnic groups' residential segregation decreases as their socio-economic status and assimilation increase (Charles, 2003; Iceland and Wilkes, 2006). In this sense, segregation largely reflects class differences. But this spatial assimilation perspective does not entirely explain the segregation pattern of Black people. Middle-class Black people are less likely to live in non-poverty White neighbourhoods, compared with their Asian, Hispanic, as well as White counter-parts (Charles, 2003; Iceland and Wilkes, 2006). Indeed, Black people benefit less from the pay-off for improved social class than other race groups do (Pais et al., 2012). The place stratification perspective examines the role of prejudice and discrimination in persisting residential segregation among Black people.

To be sure, racial/ethnic groups may exhibit in-group preferences, which could lead to some levels of segregation between groups. However, scholars have argued that opinions on racial preferences are formed based on racial stereotyping and prejudices (Charles, 2003). Undoubtedly, people's choices about residential locations are limited by social, economic and political factors (Krysan and Crowder, 2017). Yet, implicit perceptions and stereotypes affect how people think about the place (Besbris et al., 2015; Bobo, 1997; Bobo and Massagli, 2001).

Experiences in racial contexts during youth have lasting effects on neighbourhood selection in adulthood. Using the National Educational Longitudinal Study data, Goldsmith et al. (2017) showed that young adults tend to move to neighbourhoods close to their neighbourhoods of origin. In fact, the median distance moved was 15 miles for all homebuyers, and for those aged between 22 and 55, it was at just 10 miles in 2019 (National Association of Realtors Research Group, 2021). Furthermore, people tend to move to areas with similar racial compositions to their childhood neighbourhoods. The authors argue that moving distance is an important factor determining neighbourhood outcomes, because the tendency to move closer to one's original neighbourhood may explain how people end up living in neighbourhoods with similar racial composition to that of their childhood neighbourhoods.

Parental neighbourhood conditions affect the type of neighbourhood in which the next generation ends up residing, but, considering the intersecting mechanisms affecting residential attainment, the pattern of residential mobility may differ by race/ethnicity (Crowder et al., 2011; Pais et al., 2012). Although people tend to move to wealthier and whiter neighbourhoods as they accumulate wealth, the pattern of residential mobility for Black people is affected more by racial prejudice and discrimination than by income and wealth (Iceland and Wilkes, 2006; Logan and Brian, 2010; Timberlake and Iceland, 2007).

It is well documented that an individual's neighbourhood context is a function of the intersectional dynamics of race/ethnicity, class and residential context, and racial differences in neighbourhood mobility between generations. However, the relative effects of income and educational achievements on neighbourhood mobility are not well documented. In the remainder of this paper, we examine racial differences in the pattern of intergenerational neighbourhood mobility. Specifically, we explore the extent to which children's income and education moderate intergenerational transmission of neighbourhood disadvantage between Black and White families.

Data and methods

To examine differences in residential mobility between parent and child generations, we generated a national neighbourhood rank using all US Census tracts. Census tracts are relatively small geographic units, containing about 4000 residents on average, for which the US Census Bureau provides detailed sociodemographic characteristics. As such, they are well suited for neighbourhood-level analysis (ArcGIS, 2020; US Census Bureau, 2020).

We then explored racial differences in the proportion of children who moved upward or downward on the neighbourhood rank as compared with their parents. We also examined the extent to which children's neighbourhood rank in adulthood is determined by parental neighbourhood rank, while controlling for the effects of the child's own income and education.

We utilised the Panel Study of Income Dynamics (PSID), which is a longitudinal family data study that began in 1968. PSID includes over 50 years of follow-up data starting with 5000 original families. The census tract of participants' residential locations is available with a restricted data agreement. We used individual and household variables to construct parent–child pairs. For the purpose of this study, we excluded step, foster and adopted children from the analysis.

Data collected closest to the age of 35 years were used to characterise individuals' adulthood economic and neighbourhood conditions. For PSID participants who were not surveyed at age 35 or 36, we utilised observations between the ages of 30 and 40 that were closest to 35 years of age. Our analysis only focused on parent–child pairs who are Black or White. Hispanic and other racial and immigrant groups are excluded from our analysis due to their limited sample size in the data. Although the number of Hispanic and other racial groups in the PSID has increased since 1997, the number of parent–child pairs that could be used in this analysis is limited. Starting from 78,620 unique individuals in the PSID dataset, we

identified a total of 41,367 possible parent–child pairs. Of those, 2854 pairs had data for both parent and child around age 35 between 1968 and 2017. Key variables included race (Black/White), age, household income, educational attainment and neighbourhood census tracts.

We created a national neighbourhood rank by computing a neighbourhood disadvantage score using tract-level decennial census data for each decade from 1970 to 2010. The score was computed for each census period based on five variables: percentage living below poverty, percentage female-headed households, percentage unemployed, median household income and percentage receiving public assistance. Since these tract-level sociodemographic variables are highly correlated with one another, we employed principal component analysis to create a composite score (Sampson and Wilson, 1995; Sampson et al., 2007). In each period, the first principal component served as the neighbourhood disadvantage score, which captured between 61% and 70% of the variance in the underlying data, depending on the year. The neighbourhood disadvantage score was then ranked using all US census tracts, creating a national neighbourhood percentile rank for each decennial census period. By creating a separate ranking for each census period, we allow census tracts to move up or down in the national ranking over time. We assumed each census tract held its rank for a ten-year period centred between the decennial census years. For example, between 1965 and 1974, a tract would be assigned its 1970 rank, and it would be ranked using the 1980 ranking for the 1975–1984 period. These neighbourhood ranks were then linked to the PSID parent–child data discussed previously.

Intergenerational mobility of residential disadvantage was examined by creating the neighbourhood rank mobility (NRM) score, which was the difference between a child's neighbourhood rank (R_{child}) and their parent's neighbourhood rank (R_{parent}) at close to age 35 (NRM = $R_{child} - R_{parent}$). Neighbourhood ranks were also grouped into quartile categories and mobility across these quartile ranks is compared between parent–child pairs.

Analysis

To examine the relationship between parent and child neighbourhood disadvantage, we first compared the national neighbourhood ranks for parent–child pairs at age 35 using the neighbourhood rank mobility (NRM) and neighbourhood rank quartiles. The neighbourhood rank mobility (NRM = $R_{child} - R_{parent}$) takes positive values when children move up in neighbourhood ranks relative to their parents, and negative values when children move down to a lower-ranked neighbourhood compared with their parents. We then performed rank-rank regression to examine the association between parent and child neighbourhood ranks. The strength of intergenerational mobility in the rank-rank regression was measured by the slope of the parental rank variable on the child's neighbourhood ranks. An estimate of zero means a child's neighbourhood rank has no relationship to the parent's neighbourhood rank. Since neighbourhood rank is expressed as a percentile, the magnitude of the slope estimate indicates the expected increase in a child's neighbourhood rank for a 1% increase in a parent's neighbourhood rank. We allowed separate estimates for White and Black families. We also controlled for the income and education of both child and parent to examine the relative effects of children's income and education on neighbourhood rank.

Results

A total of 2828 parent–child pairs were included in this analysis. Table 1 summarises the descriptive characteristics of the parent–child pairs. Parents were observed from 1968 to 2005 (median year: 1982) and children were observed between 1977 and 2017 (median year: 2006). White parent–child pairs accounted for 59.5% and the remaining 40.5% were Black. The mean age at observation in both groups was 35.9 years for parents and 34.2 years for children.

The average family income expressed in 2017 dollars was $70,195 for the parent generation and $85,141 for the child generation. About 64% of the parents and 40% of the children had less than or equal to high school education. On average, the parent generation had 3.1 children and the child generation had 1.5 children by 35 years of age. Over 85% of both parents and children lived in urban Metropolitan Statistical Areas (MSA).

Intergenerational neighbourhood mobility

Although census tracts in the bottom quartile were overrepresented in our PSID sample, the overall neighbourhood rank distribution roughly followed the national distribution. About 36% of parents and 30% of children lived in census tracts that ranked in the bottom quartile (i.e., in the most disadvantaged neighbourhoods). Other quartiles were within 5% of the expected distribution.

In our sample, Black families were more likely to live in disadvantaged neighbourhoods compared with White families (Table 2). For the parent generation, just over 10% of White families and 73% of Black families lived in neighbourhoods ranked in the bottom 25th percentile. For the child generation, 11% of White and close to 58% of Black families lived in the bottom 25th percentile neighbourhoods. Conversely, 36% of White families and only 3% of Black families of the parent generation lived in the top 25th percentile, the most advantaged neighbourhoods. While the proportion of Black people living in the top quartile neighbourhoods increased to 8% for the child generation, a substantially larger proportion of White children (35%) belonged to the highest neighbourhood ranks.

Regardless of the parental neighbourhood ranking, the largest proportion of Black children ended up living in the lowest neighbourhood quartile in their adulthood. For example, 50% of Black children whose parents were in the second quartile of neighbourhoods and 40% of Black children whose parents were in the third quartile of neighbourhoods were residing in neighbourhoods ranked in the bottom quartile at age 35. On the other hand, White children often remained in the same neighbourhood rank quartile as their parents or moved up to the adjacent quartile by the time they reached 35 years of age (Table 2).

White and Black families showed substantially different patterns of neighbourhood mobility. The bottom 25th percentile ranking neighbourhoods were the most ‘sticky’ quartile for Black children’s neighbourhood upward mobility. Sixty-two per cent of Black children whose parents were in the lowest quartile of neighbourhoods were living in a similarly ranked neighbourhood at age 35. Conversely, the stickiest quartile for White people was the top 25% ranked neighbourhoods. Almost half of the White children whose parents were in

the most advantaged neighbourhoods retained their top 25th percentile neighbourhood rank at age 35.

In terms of the directions of intergenerational neighbourhood mobility, White children from the bottom quartile neighbourhoods were far more likely, compared with Black children, to move into higher-ranked neighbourhoods (70% versus 38%, respectively). Conversely, Black children who grew up in the top quartile neighbourhoods were more likely, compared with White children, to move down in their neighbourhood rank (81% versus 51%, respectively). Strikingly, more than a third (35.5%) of Black children whose parents were in the top quartile of neighbourhoods ended up living in a bottom quartile neighbourhood as adults, while only 6% of White children moved from the top quartile neighbourhoods to the bottom quartile as adults.

Neighbourhood rank mobility

Figure 1 depicts the median NRM by race within the parent's neighbourhood quartile. Positive NRM indicates that a child's neighbourhood rank was higher than the parent's rank. In general, children who grew up in the lowest-ranked neighbourhoods were more likely to move upward, while children from the highest-ranking neighbourhoods tend to move downward for both White and Black people. However, the size of the move differed markedly by race. For Black people, children from the lowest 25th percentile neighbourhoods were the only group with a positive median NRM, indicating that over half of these children were living in a higher-ranked neighbourhood than their parents. The median NRM for Black children whose parents were in the second, third or fourth quartiles were all negative. On the other hand, for White children, only those from the upper quartile of parental neighbourhoods had a negative median NRM, indicating a loss of neighbourhood rank for at least half the children relative to their parents. In all other cases, White children had a positive median NRM, indicating that at least half moved up in their neighbourhood rank relative to their parents.

There were substantial differences in the median NRM by parental neighbourhood quartile and race. The median NRM for White people in the lowest parental quartile was 18.2 percentage points higher than the median for Black people whose parents were in similarly ranked neighbourhoods (25.9 for White versus 7.7 for Black). Although both Black and White children had a negative median NRM at the top end of the parental neighbourhood ranks, the median NRM was 31.1 percentage points lower for Black than for White people (−44.1 versus −13.0).

Figure 2 shows the mean neighbourhood ranking for the child's generation within each parental neighbourhood rank decile. Quadratic rank-rank regression lines were estimated for Black and White people. The regression lines capture the pattern of neighbourhood rank mobility discussed above. The blue line represents White parent–child pairs and the red line represents Black parent–child pairs. The grey dotted lines indicate the standard error around the regression lines. The rank-rank regression line for White people (blue) shows a positive relationship across all parent and child ranks. The rank-rank regression line for Black people (red line) shows a positive relationship but only up to the 65th percentile; beyond this threshold, child neighbourhood rank decreases despite the increase in their parent's rank.

Income and education effects on intergenerational neighbourhood mobility

To identify the effects of parental-neighbourhood rank, income and education on the neighbourhood rank of Black and White children, we estimated regression models explaining the child's adulthood neighbourhood rank (NR_c) in relation to their race (R, 1 = White and 0 = Black), parental neighbourhood rank (NR_p), father's education (E_p), parent's family income (I_p) and the child's education (E_c) and child's income (I_c). Table 3 summarises the regression models along with the standardised coefficients. Model I considers race and parental neighbourhood rank as independent predictors of child neighbourhood rank. In Model II, parental education and income were introduced. In Model III, children's income and education were added.[1] In each of these models, we allowed separate slopes for Black and White parental neighbourhood rank, child's income and child's education. Because the parameters for parental education and income did not differ by race in Models II and III, separate slopes were not estimated for these variables. All three models supported the quadratic specification for parental neighbourhood ranking for Black people but not for White, as shown in Figure 2.

The estimated models show that child neighbourhood rank was on average 20%–30% higher for White children than for Black children, controlling for all other variables in the model (Table 3). Consistent with Figure 2, the models show that White children's neighbourhood rank rose as their parent's neighbourhood rank increased. For Black children, their neighbourhood rank increased as a function of their parent's neighbourhood rank only to a certain extent and then began to fall (Models I–III).

Parental income and education were both statistically significant in Model II. For each additional year in parental education, the child's neighbourhood rank increased by 1.3% for both Black and White people. In addition, each $1,000 in a parent's family income raised the child's neighbourhood ranking by an additional 0.05%. When the child's education and income were introduced in Model III, the effects of parental education and income were reduced. Parental education was still statistically significant and positive, but its effect was to raise children's neighbourhood rank by 0.7 percentage points for each additional year of schooling. Parental income was no longer statistically significant in explaining the child's neighbourhood rank.

Based on Model III, each additional year of education for Black children had a greater impact on their neighbourhood rank compared with White children (1.5% and 0.94%, respectively). Similarly, the effect of a child's income was four times as large for Black people as for White. A $10,000 increase in income moved the neighbourhood rank of Black children up by 1.7%, but only by 0.4% for White children. Note, however, because of the substantially large effect of race on neighbourhood rank, White children with lower education or lower income would still be expected to live in higher-ranked neighbourhoods than Black children, controlling for all other variables. Figure 3 depicts these relationships.

[1]We also tested whether using 'local' neighbourhood ranks estimated within a state for both the parent and child altered the findings of the model. Local and national rankings are highly correlated (correlation coefficients ranging from 0.94 in 1970 to 0.97 in 2010). Further, because most parent–child pairs remain in the same state, the effect of moving from national to local ranking is to move both parent and child ranks in similar ways. The model estimates using the local neighbourhood rank were similar to the estimates with the national neighbourhood rank and did not alter our findings.

Using Model III, the predicted neighbourhood ranks for Black and White children were plotted at parent's income of $30,000, $60,000 and $90,000 (holding education constant) and education levels of 12, 14 and 16 years (holding income constant). The predicted neighbourhood rank for Black and White children is markedly different. Further, at the 12th grade education level, the differences in neighbourhood rank for White people at the income of $30,000, $60,000 and $90,000 were relatively small, when all other variables were equal. Differences in the parental neighbourhood rank had a greater effect on children's neighbourhood rank than did the child's own income. For Black people, the child's own income level had a greater effect on their neighbourhood rank than it did for White people (note the gap in the plots for Figure 3). The effect of education showed a similar pattern: the effect of education was greater for Black than White people, holding parental neighbourhood rank constant. The expected neighbourhood rank for Black children was lower than for White children, even for the highest income and education groups.

One way to examine the racial neighbourhood rank gap would be to consider the amount of additional income a Black child needs in order to achieve the same neighbourhood rank as a White child, holding parental neighbourhood rank constant. In Figure 4, the red line shows the predicted neighbourhood rank for Black children against parental neighbourhood rank, and the blue line shows predicted neighbourhood rank for White children, set at the 12th grade education level and an annual income of $30,000 (see Model III in Table 3). The grey line indicates the additional income that a Black child would need to earn to reach the same neighbourhood rank as a White child, holding all other variables the same. For example, children born to parents at the 25th percentile neighbourhood rank were expected to live in neighbourhoods ranking at the 27th percentile for Black people and the 45th percentile for White people if their income was set at $30,000 and education at 12 years. Based on this model, a Black child would require an additional $106,000 of income to attain the same neighbourhood rank as a White child at a $30,000 income level, all other things held constant. The amount of income required to equalise neighbourhood ranks between Black and White children was even greater when parental neighbourhoods were at the highest as well as the lowest percentiles.

Discussion

We examined intergenerational neighbourhood rank mobility for parent–child pairs at age 35 observed in the PSID. As compared with their parents, fewer children in the data lived in the neighbourhoods ranking below the 25th percentile (36% versus 30%). Furthermore, a greater proportion of Black children than White children had moved out of the lowest quartile of neighbourhoods when compared with their parents. Despite these improvements, Black people continue to be more likely to live in lower-ranked neighbourhoods compared with White people. The already existing large Black and White gap in parental neighbourhoods may be one of the contributing factors to the persisting racial gap. Our finding is consistent with current literature concerning neighbourhood disadvantage among Black families (Firebaugh and Farrell, 2016; Sharkey, 2013). Although many Black families have moved out of highly concentrated poverty areas over the past decades, racial neighbourhood disadvantage persists and contributes to racial disparities in social, educational and economic outcomes (Ewert et al., 2010; Parks, 2012; Sampson,

2008; Timberlake and Iceland, 2007). Furthermore, our findings suggest that Black families who move to 'better' neighbourhoods may find it difficult to sustain their new neighbourhood rank across generations.

Our study also demonstrates that Black and White children often inherit different neighbourhood conditions from their parents. Our findings revealed that Black children whose parents were in the lowest quartile neighbourhoods tended to stay in the lowest-ranked areas, while the majority of White children in similar circumstances moved out of the most disadvantaged areas. On the other hand, parents' neighbourhood advantage tended to be passed down to White children. Nearly half the White children whose parents were in the highest-ranked neighbourhoods stayed in similarly ranked neighbourhoods in their adulthood. In contrast, only 1 in 5 Black children whose parents were in the highest-ranked neighbourhoods stayed in the most advantaged neighbourhoods. We also documented that the racial difference was not only in the number of people moving between quartiles but also in the scale of the move.

For children whose parents were in the lowest quartile, the median neighbourhood rank was 8 percentage points higher for Black children and 26 percentage points higher for White children, compared with their parents' neighbourhood ranking. Conversely, for children from the top quartile, the median neighbourhood rank dropped 13 percentage points for White children and 44 percentage points for Black children.

In addition, we showed that the relationship between parent and child neighbourhood rankings was linear for White families but not for Black families. Generally, children's neighbourhood ranking increases along with parental neighbourhood ranking. However, Black children's neighbourhood rank increased as parental neighbourhood rank went up, but only to a certain extent. The upper end of the Black parental neighbourhood rank failed to be transmitted to the child's neighbourhood. Consequently, neighbourhood disadvantage is stickier for Black families across generations than for White families, while neighbourhood advantage was more likely to be retained by White families across generations. Our findings indicate that the stickiness of neighbourhood context across generations works differently for Black and White families. The transmission of neighbourhood context occurs at both ends of the neighbourhood rank, and neighbourhood disadvantage is inherited more often among Black children, while neighbourhood advantage is sustained more often among White children, thus perpetuating and widening the racial gap across generations (Firebaugh and Farrell, 2016; Timberlake and Iceland, 2007).

Our findings also showed important differences in the moderating effects of education and income on neighbourhoods between Black and White people. We found that each additional year of education had a greater impact on neighbourhood ranking for Black people than for White. Similarly, the effect of a child's income was substantially larger for Black than for White people. Nonetheless, White children with lower education would obtain higher-ranking neighbourhoods than Black children. This finding may mean that advantaged neighbourhoods are more readily available to White people, while Black people require a substantially higher income to access the same level of the neighbourhood (Alba et al., 2000; Firebaugh and Acciai, 2016). More specifically, we showed that Black people would

require a substantial additional income in order to attain a neighbourhood rank equivalent to that of White people with the same educational level. This, in reality, would be a nearly unachievable task. Consequently, the neighbourhood gap between Black and White in the US seems likely to continue unless there are drastic systemic changes.

Conclusions

Parental neighbourhood context affects where children end up residing as adults. More importantly, Black and While families transmit different neighbourhood conditions, which may contribute to persisting racial inequality. Black children whose parents lived in disadvantaged neighbourhoods have difficulty moving up into higher-ranked neighbourhoods, while White children are more likely to keep their parents' neighbourhood advantage. The significance of race in determining the direction of neighbourhood mobility warrants special attention in developing policies to reduce residential disadvantage.

One's income and educational achievements improve the probability of neighbourhood upward mobility. However, income and education cannot entirely overcome the underlying racial neighbourhood disadvantage. Neighbourhood disparities that begin with the parental generation are passed on to the next generation, contributing to persistent inequalities between White and Black families. Social policy interventions need to address inherited disadvantage that sets up different paths for Black and White children. Black families are often locked into disadvantaged neighbourhoods despite the advancement in their income and education because of existing patterns of inequality. Such inherited disadvantage would require more structural approaches that go beyond individual human capital and behavioural solutions. Neighbourhood and housing choices are not entirely a consequence of one's preference or economic status. Highly racialised spatial organisation in the US constrains trajectories of residential mobility. Policy interventions that aim to improve neighbourhood conditions of the most disadvantaged areas could be useful to help reduce the racial gap in intergenerational upward mobility, by minimising the negative effects of neighbourhood disadvantage on children's life chances.

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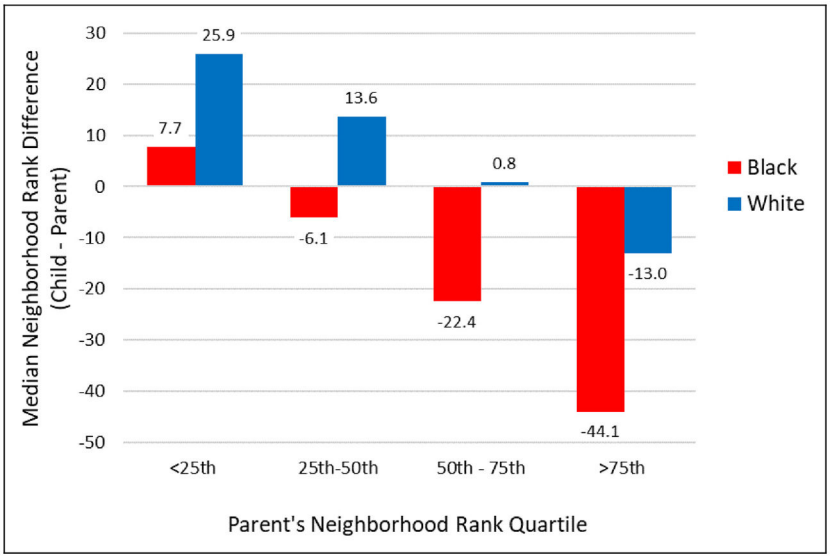

Figure 1.
Median neighbourhood rank difference by race and parental neighbourhood rank.

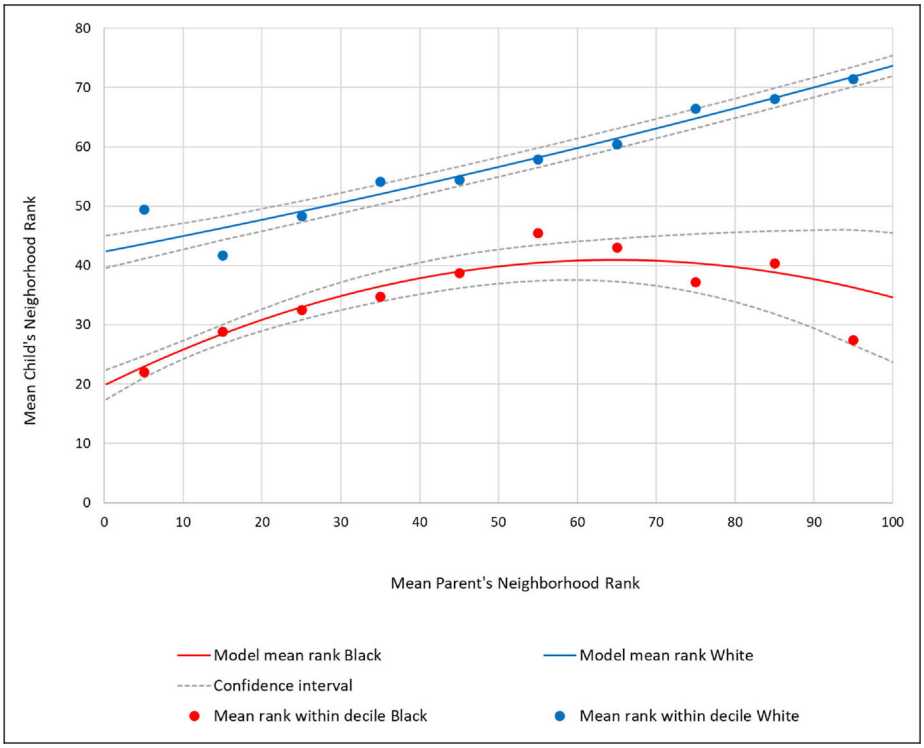

Figure 2.
The relationship between mean child and parent neighbourhood rank by race.

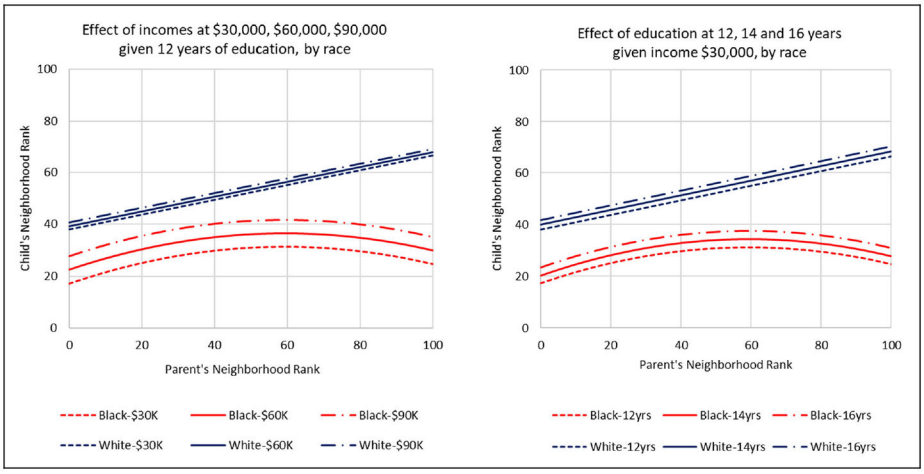

Figure 3.
Predicted neighbourhood rank by child income and education, by race.

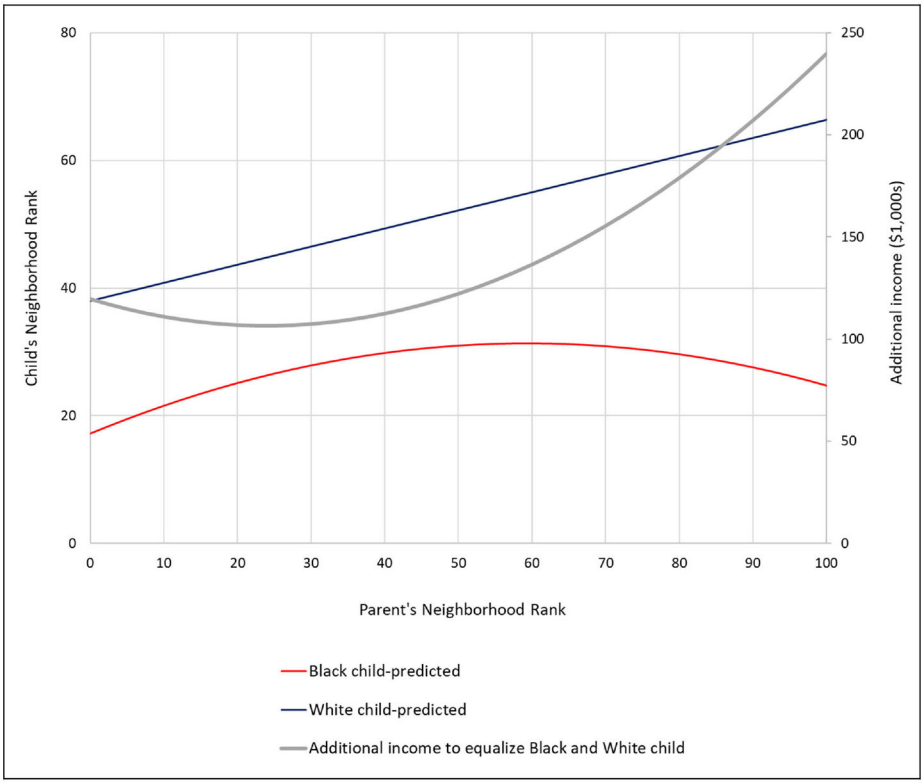

Figure 4.

Additional income required to equalise neighbourhood ranks for children with incomes of $30,000 and 12 years of education.

Table 1.

The descriptive summary of parent–child pairs ($N = 2828$).

Variables	Parent	Child
Years surveyed	1968–2005	1977–2017
Race		
White	59.2%	59.2%
Black	40.8%	40.8%
Mean age	35.9	34.2
Mean family income *		
White	$86,258	$106,818
Black	$46,344	$52,739
Education		
High school or less	63.9%	40.0%
College or higher	18.4%	31.4%
Mean number of children	3.1	1.4
Living in MSA **	85.5%	87.1%

*Adjusted by 2017 Consumer Price Index.

**Metropolitan Statistical Area.

Table 2.

Intergenerational neighbourhood mobility by race.

			***N* (%)**				
			Child Neighbourhood				
			<25th	**25th-50th**	**50th-75th**	**>75th**	**Total**
Parental neighbourhood	Black	<25th	526 (62.0)	170 (20.0)	102 (12.0)	51 (6.0)	848 (73.4)
		25th-50th	102 (50.0)	39 (19.1)	41 (20.1)	22 (10.8)	204 (17.7)
		50th-75th	29 (40.3)	20 (27.8)	10 (13.9)	13 (18.1)	72 (6.2)
		>75th	11 (35.5)	8 (25.8)	6 (19.4)	6 (19.4)	31 (2.7)
		Total	667 (57.7)	237 (20.5)	159 (13.8)	92 (8.0)	1155 (100)
	White	<25th	51 (29.7)	43 (25.0)	46 (26.7)	32 (18.6)	172 (10.3)
		25th-50th	52 (13.9)	116 (31.1)	123 (33.0)	82 (22.0)	373 (22.3)
		50th-75th	47 (9.0)	136 (26.0)	173 (33.0)	168 (32.1)	524 (31.3)
		>75th	36 (6.0)	97 (16.1)	175 (29.0)	296 (49.0)	604 (36.1)
		Total	187 (11.2)	392 (23.4)	518 (31.0)	578 (34.5)	1673 (100)
	Grand Total		854 (30.2)	629 (22.2)	677 (23.9)	670 (23.7)	2828 (100)

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Table 3.

Model estimates for intergenerational transmission of neighbourhood context.

	Unstandardised models			Standardised models**		
	Model I	**Model II**	**Model III**	**Model I**	**Model II**	**Model III**
Intercept	19.792*	3.655	−15.180*	−0.289*	−0.239*	−0.133*
White	22.506*	20.283*	31.930*	0.534*	0.450*	0.369*
Neighbourhood ranking						
Black	0.653*	0.612*	0.475*	0.216*	0.160*	0.131*
Black^2	−0.005*	−0.005*	−0.004*	−0.162*	−0.167*	−0.127*
White	0.258*	0.255*	0.284*	0.318*	0.252*	0.256*
White^2	0.001	0.000	0.000	0.018	0.004	−0.013
Parent's education	-	1.322*	0.696*	-	0.114*	0.060*
Parent's income	-	0.047*	0.012	-	0.073*	0.019
Child's education						
Black	-	-	1.537*	-	-	0.111*
White	-	-	0.937*	-	-	0.068*
Child's income						
Black	-	-	0.174*	-	-	0.493*
White	-	-	0.043*	-	-	0.123*
R^2	0.342	0.359	0.407	0.342	0.359	0.407
Adj R^2	0.341	0.358	0.405	0.341	0.358	0.405

*Significance at $p < 0.05$.

**All variables except race were centred by the mean and divided by their standard deviation. Movements of 1 standard deviation for neighbourhood rank, child education and child income are based on the standard deviations of these variables before being separated by race.