Race and Economic Opportunity in the United States
An Intergenerational Perspective

Raj Chetty, Stanford
Nathaniel Hendren, Harvard

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Disclaimer: This presentation is based on the paper “Race and Economic Opportunity in the United States: An Intergenerational Perspective” by Raj Chetty (Stanford), Nathaniel Hendren (Harvard), Maggie R. Jones (U.S. Census Bureau), and Sonya Porter (U.S. Census Bureau). The views expressed are not necessarily those of the U.S. Census Bureau. The statistical summaries reported in these slides have been cleared by the Census Bureau’s Disclosure Review Board release authorization number CBDRB-FY18-195. All values in the tables and figures that appear in this presentation have been rounded to four significant digits as part of the disclosure avoidance protocol.
Median Household Income by Race and Ethnicity in 2016

White Non-Hisp.: $63,200
Black Non-Hisp.: $38,600
Asian Non-Hisp.: $80,700
Hispanic: $46,900
American Indian/Alaskan Native: $39,700

Source: ACS 2016
## Theories of Racial Disparities

### Family-Level Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Income</td>
<td>Magnuson &amp; Duncan 2006; Rothstein &amp; Wozny 2012</td>
</tr>
<tr>
<td>Parental Human Capital &amp; Wealth</td>
<td>Oliver &amp; Shapiro 1995; Orr 2003; Conley 2010</td>
</tr>
<tr>
<td>Family Structure and Stability</td>
<td>McAdoo 2002; Burchinal et al. 2011</td>
</tr>
<tr>
<td>Ability at Birth</td>
<td>Rushton &amp; Jensen 2005 vs. Fryer &amp; Levitt 2006</td>
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</table>

### Structural Features of Environment

<table>
<thead>
<tr>
<th>Feature</th>
<th>References</th>
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</thead>
<tbody>
<tr>
<td>Discrimination in Criminal Justice</td>
<td>Steffensmeier, Ulmer, Kramer 1998; Eberhardt et al. 2004; Alexander 2010</td>
</tr>
<tr>
<td>Social Alienation, Stereotype Threat</td>
<td>Steele &amp; Aaronson 1995; Tatum 2004; Glover, Pallais, Pariente 2017</td>
</tr>
</tbody>
</table>

### Cultural Factors and Social Norms

<table>
<thead>
<tr>
<th>Factor</th>
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</thead>
<tbody>
<tr>
<td>Identity and Oppositional Norms</td>
<td>Fordham &amp; Ogbu 1986; Noguera 2003; Carter 2005; Austen-Smith &amp; Fryer 2005</td>
</tr>
<tr>
<td>Aspirations or Role Models</td>
<td>Mickelson 1990; Small, Harding, &amp; Lamont 2010</td>
</tr>
</tbody>
</table>
This Paper: An Intergenerational Perspective

- Most prior work has studied racial disparities within a single generation
  - Exceptions: school district data, survey data, qualitative studies
    [e.g., Card and Rothstein 2007, Reardon et al. 2016, Mazumder 2014, Lareau 2003]

- We take an intergenerational perspective, focusing on dynamics of income across generations
  - Use new de-identified Census data linking parents and children covering nearly the entire U.S. population from 1989-2015

- Intergenerational approach sheds light on which disparities will persist in the long run and allows us to isolate the factors that drive persistent gaps
Outline

1. Data

2. Intergenerational Persistence of Disparities by Race

3. Marriage Rates and Gender Differences

4. Family-Level Explanations

5. Neighborhood-Level Explanations
Part 1: Data and Sample Definitions
Data and Sample Definitions


- Intergenerational linkage: Children linked to parents who first claim them as a dependent on a tax return

- Target sample: Children in 1978-83 birth cohorts who were born in the U.S. or are authorized immigrants who came to the U.S. in childhood

- Analysis sample: 20 million children, 94% coverage rate of target sample
Income Measures

- Parents’ pre-tax household incomes: mean Adjusted Gross Income from 1994-2000, assigning non-filers zeros

- Children’s pre-tax incomes measured in 2014-15 (ages 31-37)
  - Non-filers assigned incomes based on W-2’s (available since 2005)
  - Begin with household income, then turn to individual (own) income

- Focus on percentile ranks: rank children relative to others in their birth cohort and parents relative to other parents
Part 2: Intergenerational Mobility by Race
Intergenerational Mobility by Race

- Organize empirical analysis using a statistical model of intergenerational mobility and inequality [Becker and Tomes 1979]
  - Let $i$ index families, $t$ index generations, and $r(i)$ denote race of family $i$
  - Model child’s income rank as a race-specific linear function of parent’s income rank:
    \[ y_{it} = \alpha_r + \beta_r y_{i,t-1} + \varepsilon_{it} \]
  - Evolution of racial gaps and steady-state disparities in mean ranks controlled by rates of relative and absolute mobility ($\alpha_r$, $\beta_r$)
Intergenerational Mobility in the United States

Mean Child Household Income Rank vs. Parent Household Income Rank

Slope: 0.351 (0.003)

Source: This and all subsequent figures and tables are based on authors’ calculations using the 2000 and 2010 Census, tax records, and 2005-2015 ACS
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Mean Black Parent Rank: 32.7
Mean White Parent Rank: 57.9

Mean Child Household Income Rank vs. Parent Household Income Rank
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Mean Black Parent Rank: 32.7
Mean White Parent Rank: 57.9
Gap = 25.2
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Mean Black Parent Rank: 32.7
Mean White Parent Rank: 57.9
Gap = 25.2

Mean Rank of Black Children: 44.8

Parent Household Income Rank

Mean Child Household Income Rank
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Mean Rank of White Children: 53.6
Mean Rank of Black Children: 44.8

Mean Black Parent Rank: 32.7
Mean White Parent Rank: 57.9
Gap = 25.2
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Mean Black Parent Rank = 32.7
Mean White Parent Rank = 57.9

Current Gen. Gap = 25.2
Pred. Gap in Next Gen. = 8.8
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Next Gen. Gap = 8.8
If intergenerational mobility did not vary by race, racial disparities would shrink rapidly across generations.

Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant

Next Gen. Gap = 8.8

Gen. 2 Gap = 3.1

Mean Child Household Income Rank vs. Parent Household Income Rank
Intergenerational Mobility for Whites vs. Blacks

Intergen. Gap at p=25: 12.6

Intergen. Gap at p=100: 15.7

Intergen. Gap at p=100: 12.4

Mean Child Household Income Rank

Parent Household Income Rank

White (Int.: $a_w = 36.8$; Slope: $\beta_w = 0.323$)

Black (Int.: $a_b = 25.4$; Slope: $\beta_b = 0.278$)
Intergenerational Mobility for Whites vs. Blacks

Mean Child Household Income Rank vs. Parent Household Income Rank

Whites' Steady State

54.4
Intergenerational Mobility for Whites vs. Blacks

![Graph showing the comparison of mean child household income rank to parent household income rank for Whites and Blacks, with steady states indicated for each group.](image-url)
Intergenerational Mobility for Whites vs. Blacks

Diff. at p=25: 12.6
Diff. at p=75: 15.7
Diff. at p=100: 12.4

Mean Child Household Income Rank

Parent Household Income Rank

White (Int.: \( a_w = 36.8 \); Slope: \( \beta_w = 0.32 \))
Black (Int.: \( a_b = 25.4 \); Slope: \( \beta_b = 0.28 \))

Steady-State Gap = 19.2
Intergenerational gaps → racial disparities persist in steady state

Current gap is close to steady state → intergenerational gaps (not transitory factors) drive most of the black-white gap today

\[ \text{Diff. at p=25: 12.6} \]
\[ \text{Diff. at p=75: 15.7} \]
\[ \text{Diff. at p=100: 12.4} \]

Mean Child Household Income Rank

Parent Household Income Rank

White (Int.: \( a_w = 36.8 \); Slope: \( \beta_w = 0.32 \))

Black (Int.: \( a_b = 25.4 \); Slope: \( \beta_b = 0.28 \))

Steady-State Gap = 19.2
Mean Child Income Rank vs. Parent Income Rank by Race and Ethnicity

White (Intercept 36.82; Slope: 0.32)
Black (Intercept 25.43; Slope: 0.28)
Asian (Intercept 51.44; Slope: 0.18)
Hispanic (Intercept 36.14; Slope: 0.26)
American Indian (Intercept 25.16; Slope: 0.31)
Mean Child Income Rank vs. Parent Income Rank by Race and Ethnicity
Children with Mothers born in the U.S.

- White (Intercept 37.48; Slope: 0.32)
- Black (Intercept 25.31; Slope: 0.28)
- Asian (Intercept 43.61; Slope: 0.23)
- Hispanic (Intercept 34.03; Slope: 0.28)
- American Indian (Intercept 25.42; Slope: 0.31)
Rates of Upward Mobility, by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Probability Child in Q5 given Parent in Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pooled</td>
<td>7.4%</td>
</tr>
<tr>
<td>White</td>
<td>10.6%</td>
</tr>
<tr>
<td>Black</td>
<td>2.5%</td>
</tr>
<tr>
<td>Asian (US Natives)</td>
<td>16.9%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7.1%</td>
</tr>
<tr>
<td>American Indian</td>
<td>3.3%</td>
</tr>
</tbody>
</table>
Rates of Downward Mobility, by Race

- White: 8.7%
- Black: 16.7%
- Asian (US Natives): 9.8%
- Hispanic: 12.0%
- American Indian: 18.8%
- Probability Child in Q1 or Q5 given Parent in Q5

Legend:
- Kids Q1 Parents Q5
- Kids Q5 Parents Q5
Intergenerational Persistence of Racial Disparities: Summary

- All racial groups in the U.S. have similar rates of relative mobility → will converge rapidly to steady state

- Key driver of disparities is therefore intergenerational gap in absolute mobility, e.g. between blacks and whites
  - Why do black children have lower incomes than white children conditional on parent income?

- Rest of the talk: test a range of explanations for black-white intergenerational gaps
Part 3: Marriage Rates and Gender Differences
Well-known that blacks marry at much lower rates than whites.

Do differences in marriage rates create mechanical differences between the household incomes of blacks and whites?

Examine marriage rates and children’s individual incomes by parental income.
Black-White Gap in Marriage Rates vs. Parent Income Rank in the U.S.

- White (Intercept: 39.25, Slope: 0.26)
- Black (Intercept: 8.03, Slope: 0.25)

Percent of Children Married in 2015 (Ages 32-37)

- Diff. at p=25: 32.1
- Diff. at p=75: 34.2
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Mean Child Individual Income Rank vs. Parent Household Income Rank

White (Intercept: 37.40, Slope: 0.27)
Black (Intercept: 33.38, Slope: 0.26)

Diff. at p=25: 4.2
Diff. at p=75: 5.6
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Male Children

Diff. at p=25: 9.7

Diff. at p=75: 12.0

White (Intercept: 41.36, Slope: 0.29)

Black (Intercept: 31.80, Slope: 0.27)
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Female Children

White (Intercept: 33.30, Slope: 0.25)

Black (Intercept: 34.86, Slope: 0.25)

Diff. at p=25: -1.4

Diff. at p=75: -1.0
Hourly Wage Rank vs. Parent Income Rank
Female Children

Diff. at p=25: 1.9

Diff. at p=75: 1.5
Employment Rates vs. Parent Income Rank
Female Children

- Diff. at p=25: -2.0
- Diff. at p=75: -2.4

Percent of Children Working in ACS (Age >= 30)

Parent Household Income Rank

White

Black

- White
- Black
Employment Rates vs. Parent Income Rank

Male Children

Diff. at p=25: 18.9

Diff. at p=75: 11.4

Percent of Children Working in ACS (Age ≥ 30)

Parent Household Income Rank

White

Black
Hourly Wage Rank vs. Parent Income Rank

Male Children

Mean Child Wage Rank (Age >= 30)

Parent Household Income Rank

White

Black

Diff. at p=25: 6.4

Diff. at p=75: 7.9
Incarceration Rates vs. Parent Income Rank
Male Children

Pct. of Children Incarcerated on April 1, 2010 (Ages 27-32)

Parent Household Income Rank

White
Black

Diff. at p=25: -8.2
Diff. at p=75: -3.2
Incarceration Rates vs. Parent Income Rank
Female Children

Pct. of Children Incarcerated on April 1, 2010 (Ages 27-32)

Parent Household Income Rank

White
Black
Part 4: Family-Level Explanations
Explaining the Black-White Intergenerational Income Gap
Parental Education, Wealth, and Family Structure

- Do family-level factors (e.g., parental wealth) explain intergenerational gaps between black and white men?

- Condition on family-level characteristics to answer this question
Effects of Family-Level Factors on the Black-White Income Gap
Children with Parents at 25th Percentile

Controls:
- None
- Par. Inc.
- Par Inc. + Two-Par.
- Par Inc. + Two-Par. + Educ.
- Par Inc. + Two-Par. + Educ. + Wealth

Mean Rank of White Minus Black:
- None: 17.6
- Par. Inc.: 10.0
- Par Inc. + Two-Par.: 9.3
- Par Inc. + Two-Par. + Educ.: 9.1
- Par Inc. + Two-Par. + Educ. + Wealth: 8.4
Effects of Family-Level Factors on the Black-White Income Gap
Children with Parents at 25th Percentile

Mean Rank of White Minus Black

Controls: None  Par. Inc.  Par Inc. +Two-Par.  Par Inc. +Two-Par. +Educ.  Par Inc. +Two-Par. +Educ. +Wealth

Male  Female

Mean Rank: 17.6  4.8  10.0  9.3  9.1  8.4

Factors:
- Par. Inc.
- Par Inc. +Two-Par.
- Par Inc. +Two-Par. +Educ.
- Par Inc. +Two-Par. +Educ. +Wealth

Male
Female
Explaining the Black-White Intergenerational Income Gap
Differences in Ability

- Ability hypothesis is inconsistent with gender heterogeneity in intergenerational gaps

1. No ex-ante reason that racial differences in ability would produce differences in outcomes for boys but not girls

2. Prior arguments for ability diffs. based on test score gaps, but black-white test score gaps do not vary by gender
Ability hypothesis is inconsistent with gender heterogeneity in intergenerational gaps

1. No ex-ante reason that racial differences in ability would produce differences in outcomes for boys but not girls

2. Prior arguments for ability diffs. based on test score gaps, but black-white test score gaps do not vary by gender
   - Test scores may not be an accurate measure of ability for black children, e.g. because of test bias or stereotype threat
     [Steele et al. 1995, Jencks et al. 1998]
Part 4: Neighborhood-Level Variation
Neighborhood Environments and the Black-White Gap

- Do blacks have worse outcomes than whites because they live in different neighborhoods?

- Begin by examining broad geographic variation across commuting zones [Chetty, Hendren, Kline, and Saez 2014]
  - Assign children to locations in proportion to the fraction of their childhood that they spent in each CZ

- Estimate expected rank of children with parents at the 25th percentile of national income distribution using linear regression within each CZ
Mean Child Individual Income Rank by CZ
White Males with Parents at 25th Percentile

<table>
<thead>
<tr>
<th>Rank</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 56.9</td>
<td>($35k)</td>
</tr>
<tr>
<td>49.4</td>
<td>($28k)</td>
</tr>
<tr>
<td>41.6</td>
<td>($22k)</td>
</tr>
<tr>
<td>&lt;36.5</td>
<td>($17k)</td>
</tr>
</tbody>
</table>

Mean Child Individual Income Rank

- > 56.9 ($35k)
- 49.4 ($28k)
- 41.6 ($22k)
- <36.5 ($17k)

Missing Data
Mean Child Individual Income Rank by CZ
Black Males with Parents at 25\textsuperscript{th} Percentile

- > 56.9 ($35k)
- 49.4 ($28k)
- 41.6 ($22k)
- < 36.5 ($17k)
Mean Child Individual Income Rank by CZ
Parents at 25th Percentile

Black Men

White Men

<36.5 ($17k)
45.8 ($25k)
>56.9 ($35k)
## Top 5 and Bottom 5 CZs in Upward Mobility for Low-Income Black Men Among 100 Largest CZs by Black Population

<table>
<thead>
<tr>
<th>Commuting Zone</th>
<th>Mean Individual Income Rank Black Males (p=25)</th>
<th>White Minus Black Individual Income Rank (p=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Top 5 CZs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boston, MA</td>
<td>44.3</td>
<td>7.8</td>
</tr>
<tr>
<td>Lafayette, LA</td>
<td>44.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Lake Charles, LA</td>
<td>43.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Baton Rouge, LA</td>
<td>43.1</td>
<td>10.8</td>
</tr>
<tr>
<td>New York, NY</td>
<td>42.4</td>
<td>13.2</td>
</tr>
<tr>
<td><strong>B. Bottom 5 CZs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Rapids, MI</td>
<td>35.5</td>
<td>11.1</td>
</tr>
<tr>
<td>Cleveland, OH</td>
<td>35.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Youngstown, OH</td>
<td>35.2</td>
<td>12.9</td>
</tr>
<tr>
<td>Tampa, FL</td>
<td>34.9</td>
<td>9.3</td>
</tr>
<tr>
<td>Cincinnati, OH</td>
<td>34.7</td>
<td>10.1</td>
</tr>
</tbody>
</table>
Neighborhood Environments and the Black-White Gap

- Commuting-zone level variation illuminates broad regional patterns but does not directly test for “neighborhood” effects

- Blacks live in different neighborhoods from whites within CZs

- Therefore focus on variation across Census tracts (70K Census tracts in the U.S., 4000 people per tract)
Variation in the Black-White Earnings Gap Across Tracts

- Now characterize black-white gaps for men *within* each Census tract and examine correlations with neighborhood characteristics

- Four key results:
  1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income
Black-White Gaps within Neighborhoods by Gender

Controls:
- None
- Par. Inc. p=25
- Tract + Par. Inc. p=25
- Block + Par. Inc. p=25
- Par. Inc. p=75
- Tract + Par. Inc. p=75
- Block + Par. Inc. p=75
- Tract
- Block

Mean Rank of Whites Minus Black

- Male
  - None: 17.6
  - Par. Inc. p=25: 11.7
  - Tract + Par. Inc. p=25: 7.9
  - Block + Par. Inc. p=25: 9.8
  - Par. Inc. p=75: 8.9
  - Tract + Par. Inc. p=75: 12.1
  - Block + Par. Inc. p=75: 1.4
  - Tract: -2.6
  - Block: -0.5

- Female
  - None: 4.8
  - Par. Inc. p=25: 2.0
  - Tract + Par. Inc. p=25: -2.2
  - Block + Par. Inc. p=25: -2.7
  - Par. Inc. p=75: -0.9
  - Tract + Par. Inc. p=75: -1.7
  - Block + Par. Inc. p=75: -2.6
  - Tract: 1.4
  - Block: -0.5
Distribution of Black – White Gap in Individual Ranks Across Tracts for Men

- Raw Fraction < 0: 11.8%
- Signal Fraction < 0: 1.3%
- Mean Gap: 7.5 pctiles
Variation in the Black-White Earnings Gap Across Tracts

- Now characterize black-white gaps for men *within* each Census tract and examine correlations with neighborhood characteristics.

- Four key results:
  
  1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income.

  2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is *bigger* in such areas.
Correlations between Tract-Level Covariates and Individual Income Rank for Black Males vs. White Males
Children with Parents at 25th Percentile

- **Economy**
  - Share Above Poverty Line
  - Mean Household Income
  - Employment Rate

- **Schools**
  - Mean 3rd Grade Math Score
  - Mean 8th Grade Math Score
  - Share HS Students Not Suspended

- **Educ. Attainment**
  - Share High School Grad.
  - Share College Grad.

- **Housing**
  - Median Rent (2BR)
  - Share Homeowners

- **Family Structure**
  - Share Married
  - Share Two-Parent

- **Healthcare Access**
  - Share Adults Insured

Magnitude of Correlation

0 0.2 0.4 0.6
Black – White Gap in Individual Income Ranks vs. Share Above Poverty Line
Males

Intercept: 3.57, Slope: 0.05

White Minus Black Mean Children Ind. Income Rank

Share Above Poverty Line in Tract in 2000 (%)
Variation in the Black-White Earnings Gap Across Tracts

- Now characterize black-white gaps for men within each Census tract and examine correlations with neighborhood characteristics

- Four key results:

  1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income

  2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is bigger in such areas

  3. Within low-poverty areas, there are two factors associated with better outcomes for black boys and smaller gaps: greater father presence and less racial bias
Percentage of Tracts in which Predicted Rank of Black Males is above National Median vs. Share above Poverty Line

Poverty Rate Below 10%
Black-White Gap in Individual Income Rank vs. Father Presence
Male Children with Parents at 25th Percentile - Poverty Share Less than 10%

Mean Child Individual Income Rank

- White; Slope: -0.00 (0.006)
- Black; Slope: 0.05 (0.006)

Percentage of Black Children with Father Present

- Diff: 6.1
- Diff: 9.3

Diff: 9.3
Black-White Gap in Employment Rates vs. Father Presence

Male Children with Parents at 25th Percentile - Poverty Share Less than 10%

Percentage of Children Working vs. Percentage of Black Children with Father Present

White; Slope: 0.02 (0.006)
Black; Slope: 0.07 (0.007)
Male-Female Gap in Employment Rates vs. Father Presence
Black Children with Parents at 25th Percentile - Poverty Share Less than 10%

Black Male; Slope: 0.08 (0.007)
Black Female; Slope: -0.01 (0.005)

Diff: 13.0
Diff: 7.7

Percentage of Children Working

Percentage of Black Children with Father Present
High School Suspension Rate for Males vs. Fraction with Fathers in Low-Poverty Areas

Slope: -0.097 (0.009)

Slope: -0.058 (0.008)

High School Suspension Rate vs. Percentage of Black Children with Father Present (Parent p = 25)

- Blue dots represent White children.
- Red dots represent Black children.

Slopes indicate a negative correlation between the percentage of Black children with father present and high school suspension rate.
### Association Between Black Father Presence and Black Boys' Outcomes

**OLS Regression Estimates**

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Black and White Father Present</th>
<th>Own Father Absent</th>
<th>Two Parents</th>
<th>All Tracts</th>
<th>Gender Ratio</th>
<th>Current Tract FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>Low-Income Black Father</td>
<td>0.0492</td>
<td>0.0450</td>
<td>0.0279</td>
<td>0.0461</td>
<td>0.0806</td>
<td>0.1052</td>
<td>(0.0062)</td>
</tr>
<tr>
<td>Presence</td>
<td>(0.0062)</td>
<td>(0.0068)</td>
<td>(0.0108)</td>
<td>(0.0128)</td>
<td>(0.0036)</td>
<td></td>
<td>(0.0079)</td>
</tr>
<tr>
<td>Low-Income White Father</td>
<td>0.0077</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Presence</td>
<td>(0.0076)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Low-Income Black Father</td>
<td>0.0387</td>
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<td>0.0387</td>
<td>(0.0043)</td>
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<td>Presence 2000</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Income Black Male</td>
<td>-0.0011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.0011</td>
<td>(0.0011)</td>
</tr>
<tr>
<td>Filers Per Child</td>
<td></td>
<td></td>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Current Tract FE</td>
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<td></td>
<td></td>
<td></td>
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</table>

Results from OLS regressions of the average income rank of black males who grow up in each census tract in below median income families (p25); standard errors in parentheses. Columns (1)-(6) are at the tract level. Column (7) has one observation per tract of origin X current tract combination.
Presence of Black Fathers: Key Takeaways

- Greater presence of black fathers in tract is predictive of boys’ outcomes even *conditional* on whether their own father is present or not
  - This is not simply about direct effect of own parents’ marital status

- What matters is presence of black *fathers* in a tract, not black men in general
  - Conditional on fraction of black children with fathers present, number of black males per child is uncorrelated with boys’ outcomes
## Association Between Racial Bias Among Whites and Black Children's Outcomes

### OLS Regression Estimates

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>Indiv. Income (Male)</th>
<th>Indiv. Income (Male)</th>
<th>Indiv. Income (Male)</th>
<th>Indiv. Income (Female)</th>
<th>Indiv. Income (Male)</th>
<th>Employed (Male)</th>
<th>Indiv. Income (Female)</th>
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<tbody>
<tr>
<td>Difference in IAT</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td></td>
<td>-0.0081</td>
<td>-0.0060</td>
<td>-0.0082</td>
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<tr>
<td></td>
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<td>(0.0019)</td>
<td>(0.0029)</td>
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</tr>
<tr>
<td>IAT White</td>
<td>-0.0080</td>
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<td>(0.0023)</td>
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<tr>
<td>IAT Black</td>
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<td>(0.0023)</td>
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<tr>
<td>Racial Animus</td>
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<td>-0.0263</td>
<td>-0.0138</td>
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<tr>
<td>State FE's</td>
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<tr>
<td>Sample Size</td>
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<td>340</td>
<td>325</td>
<td>28</td>
<td>28</td>
<td>27</td>
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</tbody>
</table>

Columns (1)-(3) are at the county level. Columns (4)-(7) are at the media market level. We restrict to counties (media markets) with poverty rates less than 10% obtained by aggregating the tract-level poverty rates up to the county level using population weights from the 2000 Census.
Variation in the Black-White Earnings Gap Across Tracts

- Now characterize black-white gaps for men within each Census tract and examine correlations with neighborhood characteristics.

- Four key results:
  1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income.
  2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is bigger in such areas.
  3. Within low-poverty areas, there are two factors associated with better outcomes for black boys and smaller gaps: greater father presence and less racial bias.
  4. Neighborhoods have causal childhood exposure effects: black boys who move to good areas at a younger age do better [based on Chetty & Hendren 2018 design].
Childhood Exposure Effects on Income Rank at Age 30

White Males

Slope: \(-0.026\) (0.003)

Coefficient on Predicted Rank in Destination

\(\delta: 0.242\)

Age of Child when Parents Move

0 0.2 0.4 0.6 0.8

0 5 10 15 20 25 30
Childhood Exposure Effects on Income Rank at Age 30
Black Males

Slope: \(-0.027\) (0.004)

Coefficient on Predicted Rank in Destination

Age of Child when Parents Move
Childhood Exposure Effects on Probability of Being Incarcerated in 2010

Black Males

Slope: -0.033

δ: 0.055
## Annual Childhood Exposure Effects on Ind. Income by Race
### OLS Regression Estimates

<table>
<thead>
<tr>
<th></th>
<th>Whites</th>
<th>Blacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Own Race Prediction</td>
<td>-0.023</td>
<td>-0.029</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>(2) Other Race Prediction (Placebo)</td>
<td>-0.004</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.004)</td>
</tr>
</tbody>
</table>

Slopes estimated using OLS regressions between ages 0-23; standard errors in parentheses.
Main lesson: childhood environment is an important driver of black-white gaps, but on dimensions that cut within residential neighborhoods

Black boys do well in nbhds. with good resources (low poverty rates) and good race-specific factors (high father presence, less racial bias)

The problem is that there are essentially no such neighborhoods in America
Father Presence and Poverty Rates by Tract for Blacks vs. Whites

Note: Low-Poverty: Poverty Rate < 10%; High Father Presence: >50% Father Presence Among Children of Own Race
Father Presence and Poverty Rates by Tract for Blacks vs. Whites

Note: Low-Poverty: Poverty Rate < 10%; High Father Presence: >50% Father Presence Among Children of Own Race
### Examples of High Upward Mobility Neighborhoods for Low-Income Black Men

<table>
<thead>
<tr>
<th>New York City, NY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastchester / Wakefield</td>
<td>Bronx, NYC</td>
</tr>
<tr>
<td>Queens Village / Laurelton</td>
<td>Queens, NYC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Washington, DC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown Silver Spring /</td>
<td>Silver Spring</td>
</tr>
<tr>
<td>Woodside Park / Woodside</td>
<td>(MD) –</td>
</tr>
<tr>
<td>Forest</td>
<td>Washington DC CZ</td>
</tr>
<tr>
<td>New Carrolton / College</td>
<td>Prince Georges’ County (MD) -</td>
</tr>
<tr>
<td>Park / Greenbelt</td>
<td>Washington DC CZ</td>
</tr>
</tbody>
</table>
Conclusions

1. Mobility into and out of poverty is a central determinant of racial disparities
   - Hispanics have relatively high rates of upward mobility → increasing income across generations
   - Blacks have much lower rates of upward mobility → persistent gaps across generations
Conclusions

1. Mobility into and out of poverty is a central determinant of racial disparities

2. Commonly proposed policies likely to be insufficient to close black-white gap
   - Changes in transfer programs and minimum wages unlikely to have persistent effects, unless they change rates of mobility
   - Reducing residential or school segregation without achieving racial integration within neighborhoods unlikely to close gap
Conclusions

1. Mobility into and out of poverty is a central determinant of racial disparities

2. Commonly proposed policies likely to be insufficient to close black-white gap

3. Reducing the gap requires policies that cut \textit{within} neighborhoods and improves environments for specific subgroups, such as black males
   - Ex: Mentoring programs, efforts to reduce racial bias
     [Heller et al. 2015, Devine et al. 2012]
   - Further evaluation of such efforts may provide a path to reducing racial disparities
Supplementary Figures
Density of Parent Household Income Ranks, White and Black Children

Mean Parent Rank = 32.7

Mean Parent Rank = 57.9
Hours Worked vs. Parent Income Rank
Male Children

Diff. at p=25: 10.6

Diff. at p=75: 8.1

Weekly Hours Worked in ACS (Age >= 30)

Parent Household Income Rank

White
Black
Hours Worked vs. Parent Income Rank
Female Children

Weekly Hours Worked in ACS (Age >= 30)

Parent Household Income Rank

White
Black

Diff. at p=25: -1.0

Diff. at p=75: -1.3
High School Completion Rates vs. Parent Income Rank

Male Children

Diff. at p=25: 8.3

Diff. at p=75: 4.2

Pct. of Children with High School Degree (Age >= 19)

Parent Household Income Rank

White

Black
High School Completion Rates vs. Parent Income Rank
Female Children

Diff. at p=25: 3.5
Diff. at p=75: 1.5

0 20 40 60 80 100
Parent Household Income Rank

50 60 70 80 90 100
Pct. of Children with High School Degree (Age >= 19)

White
Black

Diff. at p=75: 1.5
College Attendance Rates vs. Parent Income Rank

Female Children

Diff. at p=25: 2.8

Diff. at p=75: 3.6
Household Income Rank vs. Parent Income Rank
Male Children

Diff. at p=25: 13.6
Diff. at p=75: 16.6

White
Black

Mean Child Household Income Rank vs. Parent Household Income Rank

Parent Household Income Rank

Mean Child Household Income Rank
Household Income Rank vs. Parent Income Rank

Female Children

Mean Child Household Income Rank vs. Parent Household Income Rank

Diff. at p=25: 11.7

Diff. at p=75: 14.9

White

Black

Diff. at p=75: 14.9

Diff. at p=25: 11.7
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Male Children in Single-Parent Families

Mean Child Individual Income Rank vs. Parent Household Income Rank

- Diff. at p=25: 9.7
- Diff. at p=75: 12.0
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank
Male Children in Two-Parent Families

Diff. at p=25: 7.9
Diff. at p=75: 11.5
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank
Male Children, Parents Do Not Own Home

Diff. at p=25:  8.1
Diff. at p=75: 11.9
Occupational Distributions Conditional on Parent Income, by Gender
Black and White Children, Parents in 3rd Income Decile

Male

Fraction to Be Reallocated = 19.5%

Female

Fraction to Be Reallocated = 5.5%
Occupational Distributions Conditional on Parent Income, by Gender
Black and White Children, Parents in 8th Income Decile

Male

Female

Fraction to Be Reallocated = 13.2%
Fraction to Be Reallocated = 5.4%
Effects of Family-Level Factors on the Black-White Income Gap
Children with Parents at 75th Percentile

Controls: None  Par. Inc.  Par Inc. +Two-Par.  Par Inc. +Two-Par. +Educ.  Par Inc. +Two-Par. +Educ. +Wealth

Mean Rank of White Minus Black

- Mean Rank for Male
- Mean Rank for Female

- Mean Rank for None: 17.6
- Mean Rank for Par. Inc.: 11.7
- Mean Rank for Par Inc. +Two-Par.: 11.4
- Mean Rank for Par Inc. +Two-Par. +Educ.: 11.4
- Mean Rank for Par Inc. +Two-Par. +Educ. +Wealth: 11.0

- Male: 4.8
- Female: -0.9
- Male: -0.7
- Female: -0.7
- Male: -0.7
- Female: -1.2
Effects of Family-Level Factors on the Unconditional Black-White Gap

Controls:

- None: Male 17.6, Female 4.8
- Two Parent: Male 13.3, Female 1.8
- Parent Education: Male 15.2, Female 2.4
- Parent Wealth: Male 13.1, Female 1.0
Mean Child Individual Income Rank by CZ
White Females with Parents at 25th Percentile

[Map of the United States showing the mean individual income rank by county, with various shades indicating different income ranks.]
Mean Child Household Income Rank Given Parents at 25th Percentile by CZ

Whites

Correlation with Baseline: 0.77
Mean Child Household Income Rank Given Parents at 25th Percentile by CZ

Correlation with Baseline: 0.61
Correlation with White: 0.53
Mean Child Individual Income Rank for Males with Parents at 25th Percentile

Mean Rank of Black Males at 25th Percentile

Mean Rank of White Males at 25th Percentile

45 Degree Line

Mean Rank of White Males at 25th Percentile
Distribution of Black – White Gap in Individual Ranks Across Tracts
Male Children with Parents at 75th Percentile

Raw Fraction < 0: 15.2%
Signal Fraction < 0: 1.9%
Mean Gap: 9.2 pctiles
Mean Child Individual Income Rank for Males with Parents at 75th Percentile

Mean Rank of White Males at 75th Percentile

45 Degree Line

Mean Rank of Black Males at 75th Percentile
Distribution of Black – White Gap in Individual Ranks Across Tracts

Women Children with Parents at 25\textsuperscript{th} Percentile

- Raw Fraction < 0: 72.5%
- Signal Fraction < 0: 83.6%
- Mean Gap: -3.0 pctiles
Distribution of Black – White Gap in Individual Ranks Across Tracts

Women Children with Parents at 75th Percentile

Raw Fraction < 0: 60.8%
Signal Fraction < 0: 69.0%
Mean Gap: -2.1 pctiles
Black-White Gap in Incarceration Rate vs. Father Presence

Male Children with Parents at 25th Percentile - Poverty Share Less than 10%

- White; Slope: -0.01 (0.003)
- Black; Slope: -0.06 (0.007)

Diff: 7.9

Diff: 5.2
Tract Poverty Rates vs. Mean Child Individual Rank
Black and White Children

Diff. at p=25: -7.4
Diff. at p=75: -4.8

White (Intercept: 12.91; Slope: -0.05)
Black (Intercept: 21.63; Slope: -0.11)
Fraction of Kids with Father Present vs. Individual Income Rank
Black and White Children

Diff. at p=25: 27.8
Diff. at p=75: 26.9

White (Intercept: 69.20, Slope: -0.02)
Black (Intercept: 41.02, Slope: -0.00)
Disruptive Behavior, by Race and Gender

- **White**
  - Boys: 4.1%
  - Girls: 1.8%

- **Black**
  - Boys: 17.8%
  - Girls: 6.3%
Social Isolation, by Race and Gender

Picked On By Classmates

- Boys
- Girls

Left Out of Activities By Classmates

- Boys
- Girls

Share of Students

White
Black
Childhood Exposure Effects on Probability of Being Incarcerated in 2010

White Males

Coefficient on Incarceration Rate

Age of Child when Parents Move

Slope: -0.025

δ: 0.094

(0.004)
Childhood Exposure Effects for Males on Income Rank at Age 24

- Slope: -0.017 (0.001)
- Slope: -0.040 (0.002)
- Slope: -0.000 (0.009)

δ: 0.221

Coefficient on Predicted Rank in Destination

Age of Child when Parents Move

Childhood Exposure Effects for Males on Income Rank at Age 24

- Slope: -0.017 (0.001)
- Slope: -0.040 (0.002)
- Slope: -0.000 (0.009)

δ: 0.221

Coefficient on Predicted Rank in Destination

Age of Child when Parents Move