

CHILDREN'S INDIRECT EXPOSURE TO THE U.S. JUSTICE SYSTEM: EVIDENCE FROM LONGITUDINAL LINKS BETWEEN SURVEY AND ADMINISTRATIVE DATA*

KEITH FINLAY
MICHAEL MUELLER-SMITH
BRITTANY STREET

Children's indirect exposure to the justice system through biological parents or coresident adults is both a marker of their own vulnerability and a measure of the justice system's expansive reach in society. Estimating the size of this population for the United States has historically been hampered by inadequate data resources, including the inability to observe nonincarceration events, follow children throughout their childhood, and measure adult nonbiological parent cohabitants. To overcome these challenges, we leverage billions of restricted administrative and survey records linked with Criminal Justice Administrative Records System data and find substantially larger exposure rates than previously reported: prison, 9% of children born between 1999–2005; felony conviction, 18%; and any criminal charge, 39%. Charge exposure rates exceed 60% for Black, American Indian, and low-income children. While broader definitions reach a more expansive population, strong and consistently negative correlations with childhood well-being suggest that these remain valuable predictors of vulnerability. Finally, we docu-

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ment substantial geographic variation in exposure, which we leverage in a movers design to estimate the effect of living in a high-exposure county during childhood. We find that children moving into high-exposure counties are more likely to experience postmove exposure events and exhibit significantly worse outcomes by age 26 on multiple dimensions (earnings, criminal activity, teen parenthood, mortality); effects are strongest for those who moved at earlier ages. *JEL Codes:* K14, K42, J12, I32.

I. INTRODUCTION

Both human capital investments and deprivation can have critical and dynamic effects on children throughout their lives (Currie and Almond 2011). Investments in the domains of health (Black, Devereux, and Salvanes 2007; Campbell et al. 2014), education (Deming 2009; Dynarski, Hyman, and Schanzenbach 2013), housing (Chetty, Hendren, and Katz 2016), and financial well-being (Hoynes, Schanzenbach, and Almond 2016) made before children become adults can influence a lifetime of outcomes, including educational attainment, employment, earnings, and mortality. The implications of these findings for economic inequality, racial disparities, and intergenerational mobility motivate a wide range of U.S. public policies that aim to equalize opportunity regardless of family background.

One area that has received growing attention is the influence of parental involvement in the criminal justice system (e.g., Wildeman 2009; National Research Council 2014; Billings 2018; Arteaga 2021; Norris, Pecenco, and Weaver 2021). A half century of criminal justice policy has expanded both the share and degree of contact that the U.S. population has with the formal justice system, reflected in the growing number of individuals with criminal histories and dramatic expansions in imprisonment rates. Contractions in safety net assistance and social support programs may also contribute to this pattern by increasing rates of illicit activity in the population overall (Deshpande and Mueller-Smith 2022). Whether justice involvement reflects household shocks to financial or emotional stability, or exposure of children to undesirable living circumstances, the ramifications of this caseload growth may potentially be felt for decades to come because of intergenerational spillovers in households.

Precisely measuring exposure by biological parents or coresident adults to the justice system comes with several challenging hurdles. Data limitations and a prior focus on incarceration have

yielded almost exclusively exposure estimates of parental incarceration in prison or jail.¹ However, many other forms of contact with the justice system exist, such as arrests, charges, and convictions, which may independently affect child development, whether because of the justice system itself or the underlying criminal activity those events represent. Likewise, existing estimates typically quantify contemporaneous exposure at a given point in time (e.g., [Mumola 2000](#); [Glaze and Maruschak 2008](#)), which may be insufficient if these events produce long-term scarring effects.² Finally, the literature predominantly focuses on biological parents as the originating sources of justice exposure by adults in the home, which overlooks a well-established literature on changing household structure in the United States (see [Smock and Schwartz 2020](#) for a recent review), especially among racial and ethnic minority populations ([Raley, Sweeney, and Wondra 2015](#)).

In this article, we take a new approach by leveraging billions of federal tax, household survey, and program participation records linked with Criminal Justice Administrative Records System (CJARS; [Finlay and Mueller-Smith 2020](#)) data to quantify what share of recent birth cohorts in the United States have ever experienced exposure by biological parents or coresident adults to multiple stages of the criminal justice system. We address three primary shortcomings in prior estimates by accounting for (i) multiple forms of exposure beyond just incarceration, (ii) cumulative exposure over childhood relative to point-in-time exposure, and (iii) sources of exposure from adults who are not biological parents (e.g., other adult caregivers or household members). To accomplish this, we build national longitudinal relationship and residence crosswalks that incorporate novel linkages across a range of

1. For an example of prominent studies focusing on incarceration or jail, see [Mumola \(2000\)](#); [Wildeman \(2009\)](#); [Lee et al. \(2015\)](#); [Wildeman and Andersen \(2015\)](#); [Billings \(2018\)](#); [Norris, Pecenco, and Weaver \(2021\)](#); and [Enns et al. \(2019\)](#).

2. Studies that do seek to quantify the size of cumulative exposure either apply strong assumptions to aggregate data using a life tables methodology from demographic research ([Wildeman 2009](#); [Wildeman and Andersen 2015](#)) or use small longitudinal surveys like the newly fielded Family History of Incarceration Survey ([Enns et al. 2019](#)), which was conducted as part of the AmeriSpeak panel data collection effort ($N = 4,041$, 34% response rate). Smaller survey collections unfortunately lack the sample size and response rates to precisely estimate the degree of child exposure in the population, much less demographic, spatial, and temporal differences in the population.

data sources: decennial census and American Community Survey household rosters, IRS Form 1040 tax returns, Social Security Administration SS-5 registrations, and beneficiary rosters from the Department of Housing and Urban Development, the Indian Health Service, and the Centers for Medicare and Medicaid Services.

Starting with the most common measure used in the literature, we find that 0.8% of children in 1999–2005 birth cohorts in our sample of states had a biological parent in prison in any given year of childhood. The share of children exposed to the criminal justice system in any given year increases when we expand our definition to other events, such as felony convictions (0.9%), felony charges (1.2%), and any criminal charges (3.7%). The cumulative share of children ever exposed to criminal justice events, which accounts for scarring effects of exposure, dwarfs the point-in-time estimates with 3.6%, 9.2%, 11.4%, and 26% of children exposed to incarcerations, felony convictions, felony charges, or any criminal charges of biological parents during childhood. Even further, cumulative exposure estimates are 50% to 140% larger once other potential caregivers are also considered: 8.8%, 18.3%, 21.4%, and 38.9%. Corresponding estimates for exposure of Black children through potential caregivers are 20%, 35%, 42%, and 62%.³ We observe a strong household income gradient with regard to all types of exposure, although the benefit of household income at birth varies by racial and ethnic background.

One could argue that we have diluted the concept of indirect exposure, resulting in larger prevalence rates but less serious shocks for children. To study this hypothesis, we investigate how these new measures correlate with household survey data on child well-being (e.g., poverty, behind age-appropriate grade level, cognitive difficulty/stress, grandparent as primary caregiver) after controlling for place of birth, age, household income at birth, race, and sex. We find that the estimated relationships between exposure and child outcomes are often remarkably similar regardless of the type of criminal justice exposure, the recency of the event, or whether a parent or other coresident adult was the source of exposure.

3. Estimates on the intensive margin of exposure provide further evidence of racial disparities. These are discussed in [Section VI](#).

As a final exercise, we map the geographic heterogeneity of child indirect exposure across U.S. counties and leverage this variation to study the effect of living in a high-exposure area using children who move during childhood to different places and at different ages. We observe substantial intercounty variation; children living in the 75th relative to the 25th percentile of criminal justice exposure are 4.0 percentage points (\uparrow 34%) and 2.4 percentage points (\uparrow 40%) more likely to indirectly experience felony convictions and incarcerations through biological parents and/or a coresident adult. The causal effect of geography is confirmed through the movers analysis; those who move into high-exposure jurisdictions are significantly more likely to experience a postmove exposure event. We find that such dynamics have long-term implications: they increase the child's own likelihood of becoming involved in the justice system by age 26, reduce their early adult employment and earnings, increase the risk of becoming a teen parent, and raise their likelihood of death by age 26. This holds true even after controlling for other county characteristics, like the local economic mobility rate, education spending per student, racial and income segregation, and local industrial composition.

To our knowledge, we are the first to leverage U.S. administrative data to estimate the prevalence of children's exposure to a range of types of parental contact with the criminal justice system, cumulative exposure estimates over the duration of childhood, and the magnitude of exposure originating from adult household members who are not biological parents.⁴ These expanded measures fundamentally redefine the scope of the spillover population in this literature, shifting the narrative from less than 1 in 40 to almost 1 in 2 minors in the United States. Moreover, our newly documented relationships between indirect exposure, child development, and young-adult outcomes provide evidence suggesting that recent crime and social policy may have had important unintended consequences on the most vulnerable members of society, in ways that could undermine the ability of children to realize their full potential.

4. For estimates of exposure using register data in other countries, see Wildeman and Andersen (2015) using Danish registries and Hjalmarsson and Lindquist (2012, 2013) using Swedish registries.

II. WHY INDIRECT EXPOSURE MATTERS FOR CHILDREN

Indirect exposure to the justice system simultaneously reflects two broad conceptual influences on child development and well-being. First, adult involvement in the justice system could be an indication that the household is actively in a moment of crisis (financial, health, physical safety, or otherwise) that puts the child at risk. This reflects more the circumstances that led to justice involvement in the first place, rather than the direct impact of the justice system. But a second channel also arises, since exposure can represent the potential initiation of justice-based interventions to the adult that could have ramifications for the entire household. Both channels are discussed in detail below.

II.A. Households Under Strain or in Crisis

An adult being charged, convicted, or placed in correctional supervision may indicate an unsafe or harmful environment for children in the household. Criminal charges could reflect allegations of direct harm to the child, including domestic violence, abuse and neglect, sexual assault of a minor, or child pornography. Doyle and Aizer (2018) provide a review of the literature, which finds that abuse, neglect, and maltreatment are linked with future violence and criminal activity (Widom 1989; Currie and Tekin 2012), impeded brain development (Petersen, Joseph, and Feit 2014), and worsened education and earnings trajectories (Currie and Widom 2010). Together, these effects are estimated to generate substantial social costs (Fang et al. 2012; Peterson, Florence, and Klevens 2018).

Charges may also reflect adult conduct, apart from the child, that still may put the child at risk, including indications of substance abuse (possession of illicit drugs, abuse of prescription medication, driving while intoxicated), acute financial hardship (burglary, fraud, prostitution, robbery, or theft), and emotional and mental instability (disorderly conduct, violent offenses, intimate partner violence). Growing up with a parent who struggles with substance abuse has been associated with child behavioral problems (Chatterji and Markowitz 2001), incidents of neglect and foster care (Cunningham and Finlay 2013), and poorer labor market outcomes (Balsa 2008). Child poverty has been tied to effects on physical and mental health, human capital formation, youth delinquency, and economic self-sufficiency (see

National Academies of Sciences, Engineering, and Medicine 2019 for a review of the literature). Intimate partner violence and household conflict have been shown to worsen birth outcomes (Aizer 2010; Currie, Mueller-Smith, and Rossin-Slater 2022), increase disruptive behavior (Levendosky et al. 2003; Herrenkohl et al. 2008; Carrell and Hoekstra 2010), and even erode telomere length (Shalev et al. 2013).

These scenarios capture a variety of serious circumstances that children may experience. Although not necessarily a product of criminal justice policy (and in fact, criminal courts may seek to minimize the potential harms of these situations), the justice system provides a useful way to measure their prevalence in the population and gauge the effectiveness of broader safety net assistance programs to protect and provide for children in the United States.

II.B. Stress from Criminal Proceedings

The initiation of criminal charges might trigger numerous factors that add and compound stress in the household, beyond what might have existed before that point. These include anxiety about the resolution of the case and what potential sanctions might be applied, financial burdens associated with fines and fees stemming from court charges and correctional supervision (Harris, Evans, and Beckett 2010; Martin et al. 2018; Finlay et al. 2022), or internal strife if charges reveal behavior that had been concealed from other household members (e.g., illicit drug use).

Research has found that ambient stress levels can negatively affect children. From fetal development (Aizer, Stroud, and Buka 2016; Persson and Rossin-Slater 2018) to elementary and high school (Sharkey 2010; Sharkey et al. 2012; Ang 2021), stress has been shown to impede physical and cognitive development and worsen educational performance (see Almond, Currie, and Duque 2018 for a review).

II.C. Ongoing Financial Security and Future Criminal Activity

Research has also documented numerous mechanisms through which the justice system may interrupt labor market activity, jeopardize financial security, and increase long-term criminality. Mechanisms include pretrial detention (Dobbie, Goldin, and Yang 2018), criminal convictions (Pager 2003; Agan and Starr 2018; Mueller-Smith and Schnepel 2021), and incarceration (Mueller-Smith 2015). In fact, research indicates that criminal

justice involvement is self-perpetuating because it reduces one's ability to engage in the formal labor market, which creates further incentives to continue or increase illicit activity (Mueller-Smith and Schnepel 2021; Deshpande and Mueller-Smith 2022).

Financial resources have long been recognized as critical factors for child development. Birth weight (Hoynes, Page, and Stevens 2011), academic performance (Dahl and Lochner 2012; Bond et al. 2022; Barr, Eggleston, and Smith 2022), mental health (Milligan and Stabile 2011), physical health (Aizer, Stroud, and Buka 2016), future adult criminal activity (Barr and Smith 2023), and long-term self-sufficiency (Hoynes, Schanzenbach, and Almond 2016; Barr, Eggleston, and Smith 2022) have all been shown to respond to changes in available household resources during childhood. Consequently, justice contact may have long-term ramifications for the household even after the initial circumstances that led to the criminal offense are resolved, due to the lasting effects on work and recidivism.

II.D. Adult or Child Removal from the Household

Finally, the allegations associated with a criminal charge may be so severe that the composition of the household is fundamentally altered. This may include the justice-involved person exiting the household because of incarceration, but could also reflect the dissolution of a romantic relationship due to the enhanced stress in the household or the inability for the justice-involved individual to financially provide for the family. Adult exit from the household could remove a negative influence, jeopardize continuity of care as well as financial and emotional support, or both. Using judge IVs, research on the causal effect of parental incarceration on children for the marginal convicted defendant has found positive effects in Colombia and Ohio (Arteaga 2021; Norris, Pecenco, and Weaver 2021), no effect in Norway (Bhuller et al. 2018), and negative effects in Sweden (Dobbie et al. 2018).

Likewise, it may be deemed that the household is no longer a safe environment for the child. In this case, the child may be removed by child protective services and placed in the foster care system (kinship care, foster family, or group home), which research suggests can have important consequences for child well-being (Doyle 2007; Gross and Baron 2022).

III. PRIOR WORK ON CHILDREN'S EXPOSURE TO CRIMINAL JUSTICE

The leading estimates of child exposure to the criminal justice system come predominantly from a select group of surveys and focus almost exclusively on incarceration. [Mumola \(2000\)](#) and [Glaze and Maruschak \(2008\)](#) estimate that 2.1% of children in the United States in 1999 and 2.3% in 2008 have a parent in prison using the 1997 and 2007 Survey of Inmates in State and Federal Correctional Facilities.⁵ Using the same survey data, paired with aggregate caseload statistics and life table methodology, which relies on strong assumptions, [Wildeman \(2009\)](#) estimates a higher cumulative exposure to incarceration by age 14 for white (4%) and Black (25%) children born in 1990. [Enns et al. \(2019\)](#) also estimate cumulative exposure using the Family History of Incarceration Survey (FamHIS), which directly asks individuals if they have ever had a parent incarcerated in prison or jail. They find that roughly 35% of adults aged 18–29 years in 2018 and 10% of adults in their fifties report ever having a parent incarcerated (prison or jail).⁶

Although surveys can be tailored to target a specific question, they can also suffer from reporting biases and small sample sizes, and often have poor coverage of the criminal justice population due to their low residential stability ([Roman and Travis 2004](#)), low educational attainment ([Harlow 2003](#)), and memberships in racial and ethnic minority groups ([Carson and Anderson 2016](#)). Consequently, an emerging literature has sought to study child exposure to the criminal justice system using administrative data. Benefits of this approach include population-level measurement without concerns about social desirability or attrition biases. Many of these papers, however, are based in Sweden ([Hjalmarsson and Lindquist 2012, 2013](#); [Eriksson et al. 2016](#)) or Denmark ([Wildeman and Andersen 2015](#)), where integrated administrative data systems to support research and statistical reporting are among the most advanced in the world. The informativeness of these findings for U.S. policy is limited, given

5. These statistics are inferred from reports that 55% (51.9%) of individuals in state prisons in 1999 (2007) reported having a minor child, and 63% (62.9%) of individuals in federal prisons in 1999 (2007) reported the same.

6. There is a similar body of evidence focusing on siblings and other members of an individual's social circle who have been to prison ([Lee et al. 2015](#); [Enns et al. 2019](#)).

the vast differences in the operations of the respective criminal justice systems (Barclay et al. 2003).

Two U.S.-focused studies, Norris, Pecenco, and Weaver (2021) and Billings (2018), examine the effects of parental criminal justice events on child outcomes using administrative records in Ohio and North Carolina, respectively. Norris, Pecenco, and Weaver (2021) report that 38.2% of defendants in Ohio are linked to children through birth certificates. Birth certificates unfortunately often have incomplete information, particularly for the father. For example, maternal and paternal information are observed for 99.99% and 88% of Ohio birth certificates (1972, 1984–2017) and both parents' information is observed on only 65% of Michigan birth certificates (1993–2006) (Almond and Rossin-Slater 2013; Norris, Pecenco, and Weaver 2021). Billings (2018) links school-aged children to parents identified in educational records in North Carolina using address information on school, arrest, and incarceration records and reports that 9.7% of unique children are exposed to a parental arrest during the 1998/1999 to 2010/2011 school years, with a contemporaneous exposure rate of 2% and 1% for parental arrests and incarcerations, respectively.

A remaining challenge, as Sykes and Pettit (2014) point out, is the added complexity stemming from evolving household structures and changing partnerships, particularly among those directly and indirectly interacting with the criminal justice system. In general, household formation and structure in the United States has undergone significant transformations over the past half century (Bumpass and Lu 2000; Raley and Sweeney 2020), with important heterogeneity by race (Lichter et al. 1992; Parker, Sassler, and Tach 2021). Together, these have first-order implications for overall and differential undermeasurement of indirect exposure among children.

IV. LEVERAGING SURVEY AND ADMINISTRATIVE DATA TO MEASURE COHABITATION, RELATIONSHIPS, AND JUSTICE CONTACT

Currently, no single data set in the United States captures all potential adult-minor relationships formed in their household over the course of their childhood. This project brings together a number of restricted-access administrative and survey data sets available through the Census Bureau's Data Linkage Infrastructure to address this problem. Although each individual data set

has its own limitations, together they provide an opportunity to measure the population in unprecedented ways.⁷ Using their combined strength, we produce new population-level residence and relationship crosswalks that identify where each person in the United States lives in a given year, and with whom they share familial and coresidency relationships. With intergenerational linkages identified, we leverage CJARS to track several forms of exposure to the justice system. An overview of the data, linkage processes, sample restrictions, and measurement concepts is provided below; detailed information on the construction and performance of our residency and relationship crosswalks can be found in [Online Appendix B](#).⁸

The residential crosswalk seeks to establish the best-known address for every person in the United States on an annual basis. It incorporates administrative sources like IRS tax filings and household survey data like the decennial censuses.⁹ When multiple addresses are identified for an individual in a given calendar year, priority is given first to addresses from Census Bureau surveys, then from tax records, and then from public program data.

The residence crosswalk functions as the “backbone” of the relationship crosswalk. First, for each year, all coresident individual pairs are identified. Where possible, these cohabiting relationships are further delineated into specific relationship

7. For example, information about dependents from tax returns is only available for individuals who file a tax return. Similarly, public-assistance caseload data are only available for low-income individuals who participate in these programs. Decennial census data is comprehensive, but only available every 10 years.

8. Person-level data are linked using the Census Bureau's Protected Identification Key (PIK), which are assigned to records using the Person Identification Validation System (PVS) ([Wagner and Lane 2014](#)). While there is some nonrandom selection in PIK assignment ([Bond et al. 2014](#)), this project minimizes possible linkage bias by combining data from many sources. Over 90% of CJARS IDs with more than one record receive a PIK through the PVS system, and 75% of CJARS IDs with only one occurrence receive a PIK ([Finlay and Mueller-Smith 2020](#)).

9. We harvest residential addresses from the following data sources: decennial censuses (2000, 2010), American Community Survey (2001–2018), IRS Form 1040 tax filings (1969, 1974, 1979, 1984, 1989, 1994, 1995, 1998–2018 tax years), IRS Form 1040 electronic tax filings (2005, 2008–2012), Department of Housing and Urban Development (HUD) program data (Longitudinal PIC/TRACS: 1995–2016, 2018; PIC: 2000–2014; TRACS: 2000–2014), Centers for Medicare and Medicaid Services enrollment data (EBD: 2000–2017; MSIS: 2000–2014), Indian Health Service enrollment data (1999–2017), and the Master Address File-Auxiliary Reference File (2000–2018).

types based on available information.¹⁰ Because of the limited temporal coverage where we can effectively link children to coresident adults, we focus our analysis on the cohort of children born between 1999 and 2005 to measure exposure to parental and other potential caregiver criminal justice involvement (see [Online Appendix Figure A1](#) for sample composition descriptives).¹¹

[Figure I](#) summarizes the performance of the crosswalks for all children and by racial subgroup. Overall, we are able to successfully link 97% of our focal children to female potential adult caregivers and 95% to male potential adult caregivers; furthermore, we can identify female biological parents for 90% of these children and male biological parents for 76%. We also find that 4.7%, 22%, 29%, and 46% of children are observed with a step/adopted/foster parent, extended family (grandparent/aunt/uncle), unclassified caregivers, and unclassified cohabiting adults, respectively.¹² In terms of the number of linked caregivers, we observe two or more female (male) potential caregivers for 48.3% (46.1%) of children (see [Online Appendix Figure A3](#)), which could be due to several factors: parents with multiple romantic partners over time, households with same-sex romantic partners, multigenerational households, or doubled-up households where multiple families share the same accommodations. Further discussion of these results, particularly by racial subgroup, can be found in [Online Appendix B](#).

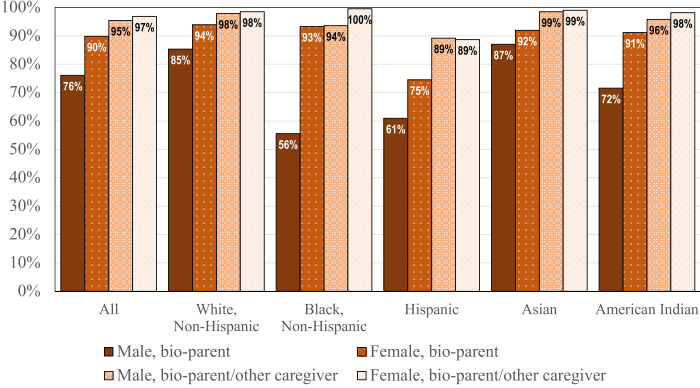
Adult justice system contact is measured using the 2020 vintage of CJARS, which covers 23 states with over 175 million unique events spanning multiple procedural stages of the justice system (i.e., arrest, charge, conviction, incarceration, and/or parole) with some jurisdictional coverage going back to the late 1970s. Because temporal and procedural coverage varies by

10. Sources include the 2000 and 2010 decennial censuses, the American Community Survey, dependents listed on IRS Form 1040 filings, HUD program data, and the Census Household Composition Key (CHCK) file that is based on Social Security Administration SS-5 applications for Social Security Numbers.

11. The Decennial Census Digitization and Linkage project is an initiative to link microdata from the 1960–1990 decennial censuses ([Genadek and Alexander 2019](#)). When these data become available at the Census Bureau, we will be able to investigate how exposure rates have changed over time.

12. [Online Appendix Figure A2](#) validates these relationship links by successfully replicating recent fertility estimates from the National Center for Health Statistics and the National Vitality Statistics System. Linkage performance varies by child's race and ethnicity, which may result in underestimates of the true degree of indirect exposure, particularly in Black and Hispanic populations.

(A) Share of children ever observed with biological parent and other potential caregiver relationships



(B) Share of children ever observed with specific potential caregiver relationships

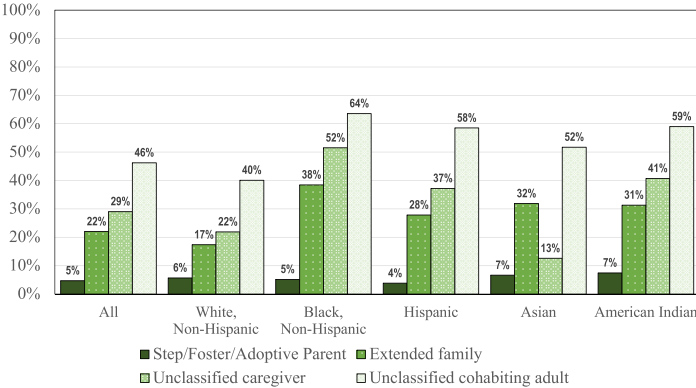


FIGURE I

Share of Children in 1999–2005 Birth Cohorts Ever Observed with Relation Type, by Child Race/Ethnicity

Source. Authors' calculations from the Census Numident, Census BestRace files, CJARS, and CJARS relationship crosswalk.

This figure depicts the types of parental relationships identified for children in the Census Numident born between 1999 and 2005 from all states who are identified with a potential caregiver relationship. Potential caregivers are defined as biological parents, stepparents, adopted parents, foster parents, unclassified caregivers, grandparents, aunts/uncles, nonfamilial adults (cohabiting two or more years), and unclassified adults (cohabiting two or more years). The relationship can be observed at any point in time and only needs to be observed once to create the link between adult and child. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval number CDBRB-FY22-ERD002-001.

jurisdiction, we restrict our analysis to children born in geographies covered by CJARS in their year of birth. Sufficient coverage is available to study criminal charges, felony charges, and felony convictions in Arizona, Florida, Maryland, Michigan, New Jersey, North Carolina, North Dakota, Oregon, Texas, and Wisconsin, which collectively cover 29.5% of the U.S. population in 2000.¹³ Likewise, sufficient statewide coverage is available to study prison incarceration in Arizona, Florida, Michigan, Nebraska, North Carolina, Pennsylvania, Texas, Washington, and Wisconsin, which cover roughly 30.3% of the population.¹⁴ Even though CJARS does not have complete national coverage, [Online Appendix Figures B3 and B4](#) document how CJARS states do not meaningfully differ from non-CJARS states in terms of crime and incarceration rates or in demographic and socioeconomic characteristics.

V. ESTIMATES OF CHILD EXPOSURE TO ADULT CRIMINAL CHARGES, CONVICTIONS, AND INCARCERATION

In this section, we report our overall findings on the extent of indirect exposure of children to charges, convictions, and incarceration by adult members of their household. To align with the previous literature, we begin by focusing on contemporaneous exposure rates stemming from justice system contact among biological parents. We then expand these definitions to account for cumulative exposure over the duration of childhood. Finally, we incorporate other potential caregivers in addition to biological parents as sources of potential exposure to arrive at our most comprehensive measures of the share of children in the United States who experience the justice system secondhand through adults in their households. [Section VI](#) delves further into these estimates, examining differences in exposure by child's race, household income, adult's sex, and coresidency status at the time of exposure.

V.A. Contemporaneous Exposure from Biological Parents

We first start with the most common estimate from the literature: child exposure to a biological parent in prison at some

13. Our data on misdemeanor and felony criminal charges do not include offenses classified as civil infractions, such as many minor traffic offenses. Instead, these represent allegations that rise to the level of a court charge.

14. See [Finlay and Mueller-Smith \(2020\)](#) for an overview of CJARS, its codebook, and its location-specific coverage. Jail records are currently not included in CJARS and thus are not included in the exposure estimates.

point in time. Specifically, we measure the probability that a minor child has a biological parent in prison in a given year using the following equation:

Contemporaneous exposure

$$= \frac{\sum_{by=1999}^{2005} \sum_{i=1}^{N_{by}} \sum_{t=0}^{T_{by}} \text{CJ Exposure}_{by,i,t}}{\sum_{by=1999}^{2005} N_{by} \times T_{by}},$$

where by denotes the year of birth for a child, i references each child in the sample, N_{by} reflects the total number of children born in birth year by , t refers to the age of a child, and T_{by} denotes the number of years the child is in the sample—either until age 18 or until the place of birth is no longer covered by CJARS.¹⁵ CJ Exposure $_{by,i,t}$ will equal 1 if child i born in year by had a biological parent (male or female) in prison when they were age t , and 0 otherwise.

In Figure II, Panel A, we document that 0.8% of children in our sample have a biological parent in prison in a given year during their childhood, with 0.3% having a parent enter prison in a given year.¹⁶ A significantly larger share of children have biological parents face criminal court proceedings, including felony convictions (0.9%), felony charges (1.2%), or any criminal charges (3.7%).

V.B. Cumulative Exposure from Biological Parents

If children experience long-term scarring from parental involvement in the justice system, it is insufficient to know what share of children have been exposed in a given year. Instead, we need to identify how many have ever experienced exposure over the course of their childhoods. To answer this, we expand our

15. For example, children born in 2005 will only be in the sample for 13 years by definition.

16. The 0.8% estimate is lower than prior BJS estimates of 2.0% and 2.3% (Mumola 2000; Glaze and Maruschak 2008) for several reasons. First, the Survey of Inmates in State and Federal Correctional Facilities includes individuals in state and federal prisons, where a larger share of federal prisoners report being a parent (~60%). Second, the survey asks about any minor children: biological, step, or adopted. If we instead include potential caregivers, we estimate 3.1% of children are exposed to prison, which is greater than the literature estimates as would be expected given the more expansive definition of a potential caregiver relative to the survey's question.

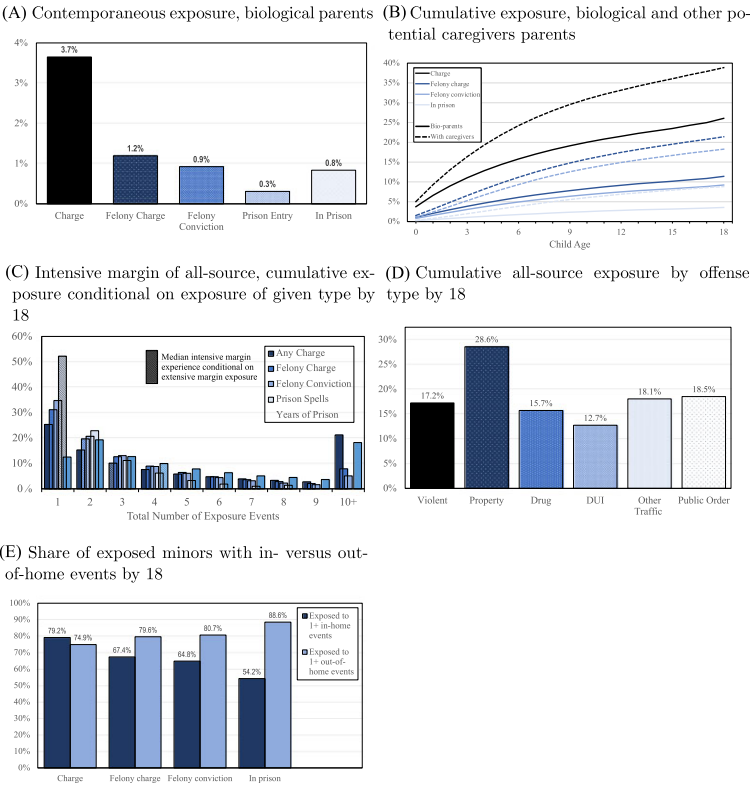


FIGURE II

Exposure to the Criminal Justice System and Comparison of Measures

Source. Authors' calculations from the Census Numident, CJARS, and CJARS relations and residency crosswalks.

Estimates and sample sizes have been rounded to preserve confidentiality. For Panels A and B, the sample consists of individuals in the Census Numident 1999–2005 birth cohorts in CJARS-covered geographies from birth until X , where X represents years since birth (0–18) with the place of birth still covered or year 2018. CJARS court records cover AZ, FL, MD, MI, NJ, NC, ND, OR, TX, and WI. CJARS incarceration records cover AZ, FL, MI, NE, NC, PA, TX, WA, and WI. Potential caregivers are defined as biological parents, stepparents, adopted parents, foster parents, unclassified caregivers, grandparents, aunts/uncles, nonfamilial adults (cohabiting two or more years), and unclassified adults (cohabiting two or more years). For Panels C, D, and E, the sample consists of individuals in the Census Numident 1999–2000 birth cohorts in CJARS-covered geographies from birth until age 18. Distinct events are counted among children with any exposure. Thus, multiple charges filed on the same date are considered one event, and similarly for the other types of criminal justice events. The number of events is truncated at 10 events for all events except prison spells, which are top coded at 8. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval numbers CBDRB-FY22-ERD002-001, CBDRB-FY22-ERD002-003, and CBDRB-FY22-ERD002-009.

previous measure to quantify the cumulative exposure to parental criminal justice events. Formally, we calculate the following:

$$\text{Cumulative exposure}^\tau = \frac{\sum_{by=1999}^{2005} \sum_{i=1}^{N_{by}} 1 \left[\left(\sum_{t=0}^{\tau} \text{CJ Exposure}_{by,i,t} \right) > 0 \right]}{\sum_{by=1999}^{2005} N_{by}},$$

where the numerator sums over the total number of children with a given type of exposure by age τ and the denominator divides by the total number of children born in the birth cohorts under consideration.

Figure II, Panel B (solid lines) presents the share of children ever exposed by age τ (from 0 to 18) to a biological parent being in prison, convicted of a felony, charged with a felony, or charged with any criminal offense. We find that 3.6% of children experience a biological parent in prison by age 18, a 350% increase over the contemporaneous measure. Given that prison spells typically occur over multiple years, this increase observed from contemporaneous to cumulative exposure is large but relatively small in comparison with the other justice exposure measures we consider. By age 18, 9.2% of children were exposed to a biological parent's felony conviction (900% increase), 11.4% of children were exposed to a biological parent's felony charge (854% increase), and 26.0% of children were exposed to a biological parent's (misdemeanor or felony) criminal charge (613% increase).¹⁷ Cumulative exposure grows steadily through childhood. Given our focus on the extensive margin of exposure, note that the majority of first-time exposure occurs by ages 5–7. From that point forward, cumulative exposure grows at a slower but roughly linear rate, likely reflecting both saturation among children in households with justice-involved adults and a slowdown in illicit activity as adults themselves age (see Mueller-Smith, Pyle, and Walker 2023).

17. Enns et al. (2019) estimate that 20% of respondents report that a parent was in jail or prison for at least one night; notably, these estimates have a steep age gradient with 34% of 18–29-year-olds having a parent incarcerated compared to roughly 10% of respondents in their fifties (see figures 2 and 4 of their paper). For children born in 1990, Wildeman (2009) and Wildeman and Andersen (2015) use life tables and the Survey of Inmates in State and Federal Correctional Facilities to estimate exposure by age 14 for children born in 1990; 25%–28% of Black children and 3.6%–4.2% of white children are exposed to parental incarceration with 7.96% (0.58%) having paternal (maternal) exposure (see table 3 of their paper).

V.C. Cumulative Exposure from All Potential Caregivers

Finally, we expand our measure of exposure to all observed potential caregivers: biological parents, stepparents, adoptive parents, foster parents, unclassified caregivers, grandparents, aunts/uncles, nonfamilial adults (cohabiting 2+ years), and unclassified adults (cohabiting 2+ years). To be conservative, we do not include any criminal justice involvement from other potential caregivers prior to cohabitation in our exposure measures. For example, if a stepparent has a felony conviction when the child is 3, but does not coreside with the child until the age of 6, then the child is not considered exposed to the event.¹⁸

Overall, we find that 8.8% of children are exposed to a potential caregiver in prison by age 18, 18.3% to a felony conviction, 21.4% to a felony charge, and 38.9% to any criminal charge. These estimates of child exposure to the criminal justice system that incorporate other adult influences in the household are much larger than those that restrict to just biological parents, with a 140% increase in exposure to prison, 99% increase in felony convictions, 88% increase in felony charges, and 50% increase in any criminal charges (misdemeanor or felony). Relative to contemporaneous exposure from biological parents, which has occupied most of the literature's attention, these broadly defined cumulative exposure measures are 958%, 1,881%, 1,693%, and 964% higher than single-year exposure to prison, felony convictions, felony charges, and any criminal charges, respectively.

Because we do not incorporate criminal justice contact among other potential caregivers before they initiate cohabitation in the household, the growth rate in cumulative exposure over ages 0 to 18 is more consistent year over year compared to exposure rates focused just on biological parents (see Figure II, Panel B dashed line). This reflects, in part, the fact that other potential caregivers must first join the child's household and then initiate contact with the justice system before a child will be counted as "exposed."

V.D. Intensive Margin of Exposure

Prior results have focused on the extensive margin of exposure, referring to whether one or more events have happened in a

18. This assumption is quite strong. While children may not have direct exposure to the event, they may have indirect exposure to the justice system through ongoing community supervision requirements or direct exposure to secondary effects of justice contact, such as diminished wages from criminal records.

child's household while they are minors. Although this represents important new evidence, it only partially characterizes the experience of children whose households have repeated contact with the criminal justice system over their childhood, which we refer to as the intensive margin of exposure.

Figure II, Panel C documents variation in the number of distinct events that children are exposed to by activity type among those who are exposed at least once. For example, multiple felony charges filed on the same date are considered one event, but felony charges filed in the same year on different dates would be two distinct events. The median exposed child (patterned bars) lives in a household that faces three criminal charges, two felony charges and convictions, one prison spell, and four years of adult incarceration.¹⁹ At the high end, 21.2%, 7.9%, 5.1%, and 18.2% of exposed children live in a household with 10 or more charges, felony charges, felony convictions, and years of adult incarceration, respectively. This is important to keep in mind when interpreting Figure II, Panel B, where we observe slowing increases in extensive-margin exposure starting around age 5. While a child only experiences first-time exposure once, their household's contact with the justice system likely continues to deepen over the course of their childhood.

V.E. Offense Types

In Figure II, Panel D, we disaggregate cumulative exposure rates by age 18 by the nature of the criminal charge: violent, property, drug, driving under the influence (DUI), other criminal traffic, and public order.²⁰ Different types of offenses provide a window into the potential living circumstances of the most vulnerable children, including exposure to violence, substance abuse, or material need as indicated by income-motivated crimes like prostitution or burglary. Property offenses are the most commonly experienced among children (29%), yet an astonishing 17% of children grow up in a household where an adult faces violent crime charges. In addition, 16% have adults in their household facing illicit drug charges during childhood.²¹

19. The median for each type of exposure is conditional on being exposed to the specific event type.

20. See [Online Appendix](#) Table B4 for information on the most commonly occurring offenses within these broader categories.

21. [Online Appendix](#) Figures A7A and A7B disaggregate this exercise by race and household income for further context into the documented racial and economic

V.F. *Exposure During and After Coresidence*

A potential concern regarding the estimates presented so far is whether the observed caregiver is still in the child's life in a meaningful way at the time of the criminal justice exposure. We explore this in [Figure II](#), Panel E, where we find that the majority of children at all levels had an exposure event by a current or recently coresiding adult in their household.²² In fact, given that it is highly uncommon for an individual to receive a prison sentence for their first criminal charge, it is likely that the subset of children with exclusively "out-of-home" exposure to severe outcomes like prison, also had less severe "in-home" events that precipitated that event.²³ Regardless, because of factors like child support and ongoing social relationships, we believe tracking out-of-home events is still worthwhile and policy relevant.

VI. SOCIOECONOMIC VARIATION IN EXPOSURE OUTCOMES

In this section, we dig further into the findings of [Section V](#), disaggregating cumulative exposure rates by age 18 from any potential caregiver by the child's race and ethnicity, family income at birth, and the potential caregiver's sex.

VI.A. *Exposure by Child's Race and Ethnicity*

Stark divides emerge when disaggregating exposure rates by the race and ethnicity of children. As seen in [Figure III](#), Panel A, 62% of Black, non-Hispanic (referred to as Black for the remainder of the article) children grow up in a household where one or more potential caregivers are charged with either a misdemeanor or felony criminal offense. American Indian/Alaska Native children have a similarly high rate at 60%, and 45% of Hispanic children

disparities in exposure to the criminal justice system. For example, roughly one in three Black and American Indian children have an adult in their household face violent crime charges, while only one in eight white children face the same. Across the household income distribution, property offenses are the most responsive, while DUIs decline the least.

22. Recent coresidence is defined as the adult and child being observed living together in the year of the event or either of the two years prior. See [Online Appendix Figure A4](#) for detailed information on how these rates evolve over ages 0 to 18, for biological parents and all potential caregivers.

23. These results are consistent with statistics from the Survey of Inmates in State and Federal Correctional Facilities: 36% of fathers and 59% of mothers cohabitate with their minor children prior to incarceration ([Mumola 2000](#)).

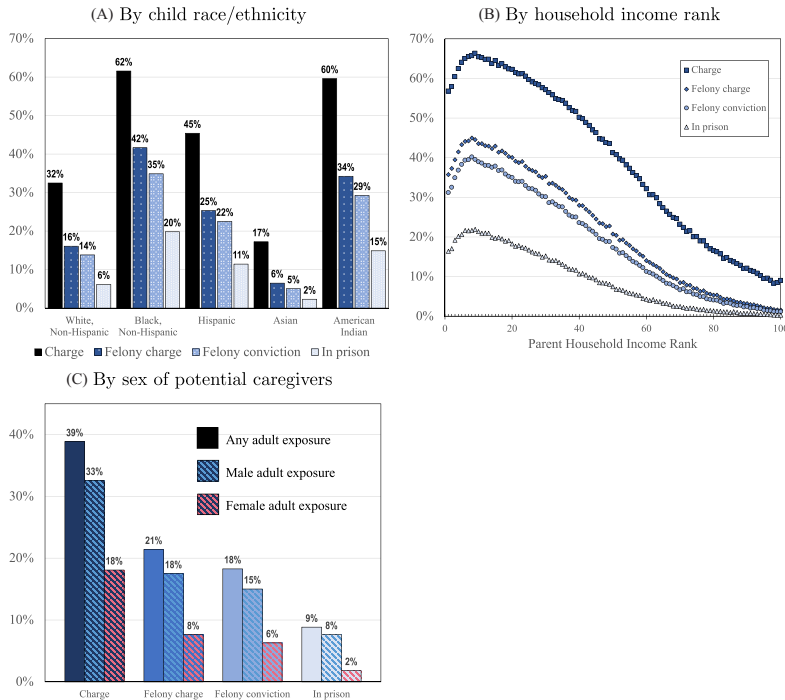


FIGURE III

Heterogeneous Cumulative Exposure to the Criminal Justice System by all Potential Caregivers by Age 18: Charge, Felony Charge, Felony Conviction, Incarceration

Source. Authors' calculations from the Census Numident, Census BestRace files, CJARS, CJARS relations and residency crosswalks, and IRS Form 1040s (1999–2009 tax years).

Estimates and sample sizes have been rounded to preserve confidentiality. The sample consists of individuals in the Census Numident 1999–2000 birth cohorts in CJARS-covered geographies from birth until age 18. Average exposure by age 18 is depicted for children across race/ethnicity (Panel A), income percentile bins (Panel B), and sex of adult potential caregivers (Panel C). Income percentile bins are determined using the average adjusted gross income reported on IRS Form 1040s, in which the child is claimed for the first five years. Children claimed on a form with negative AGI or never claimed in the first five years are not included in the sample. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval numbers CBDRB-FY22-ERD002-001 and CBDRB-FY22-ERD002-003.

have a potential caregiver charged with a criminal offense. White, non-Hispanic (referred to as white for the remainder of the article) and Asian children have high but relatively lower rates of indirect exposure to criminal charges at 32% and 17%,

respectively. Exposure rates decline for more serious forms of criminal justice contact but remain considerably high: 11%–20% of Black, Hispanic, and American Indian/Alaska Native children have a parent or other potential caregiver in prison during their childhood; corresponding estimates for white and Asian children are 6% and 2%, respectively.²⁴ This pattern actually reflects growing racial and ethnic disparities with the seriousness of exposure type. Likewise, exposure dosage (the intensive margin) is higher among racial and ethnic minorities, even after conditioning on the extensive margin (see [Online Appendix Figure A8](#)).

VI.B. *Exposure by Household Income Rank*

[Figure III](#), Panel B documents changing exposure risk over the household income distribution, as measured at birth and in the following four years.²⁵ We observe a strong income gradient with regard to indirect criminal justice exposure by a potential caregiver, which is consistent with prior work suggesting parental criminal justice contact inhibits social mobility along a range of outcomes, including the child's own likelihood of adult incarceration ([Chetty et al. 2018](#)).²⁶ Children born in households at the 10th percentile of income experience exposure rates roughly 60%–190% higher than children born at the 50th percentile of household income, and 440%–2,950% higher than children born at the 90th percentile of household income. While exposure rates for any

24. [Online Appendix Figure A5](#) provides the time path of cumulative exposure by racial subgroup. [Online Appendix Figure A6](#) compares differences in cumulative exposure from biological parents by child's race. [Online Appendix Figure A7](#) breaks out offense type exposure by racial subgroup and household income.

25. We link children to the tax filings on which they are claimed as a dependent during the first five years of their lives and average over annual adjusted gross income. Children are ranked according to household income in birth year, and exposure is calculated in individual percentiles. Income is imputed to zero in years in which the child is not claimed. Children never claimed or claimed on a tax filing with negative income in any year are excluded.

26. At the very bottom of the income distribution, there is a reduction in exposure rates. This is driven by very low-income children having fewer associated tax filings and therefore fewer child-adult linkages made (see [Online Appendix Figure A9](#)). [Online Appendix Figure A10](#) reproduces the income gradient in [Figure III](#), Panel B separately by child's race and ethnicity. While it is true that all subgroups exhibit a gradient, there also remain consistent gaps of 10–20 percentage points between minority children and white children conditional on household income. Interestingly, Hispanic children begin with lower exposure rates than white children, which is reversed by the 40th percentile of household income.

charges remain nonzero at slightly below 10 percentage points at the very top of the income distribution, no more than 0.3%–3.2% of children at or above the 90th income percentile experience exposure to felony charges, felony convictions, or incarceration.

VI.C. *Exposure by Sex of Potential Caregiver*

Figure III, Panel C depicts the cumulative exposure rates by age 18 by the sex of the potential caregiver. The vast majority (over four-fifths) of children with indirect exposure (at all levels of severity) experience a male potential caregiver having contact with the justice system. Many children are also exposed by female potential caregivers; in fact, across all types of measured exposure, 13%–18% of exposed children are exposed exclusively by female adults in their household. But with increasing severity of contact, the share exposed by both male and female potential caregivers declines and the share exposed by exclusively male potential caregivers increases. For instance, 80% of prison exposure comes exclusively from male potential caregivers, while only 53% of criminal charge exposure comes exclusively from male potential caregivers.²⁷

VII. VARIATION IN EXPOSURE DEFINITIONS AND CHILDHOOD OUTCOMES

So far we have documented unprecedentedly high rates of indirect exposure of children to the U.S. criminal justice system through parents and other coresident adults in their households; for example, close to two out of three Black children grow up in households where an adult has faced criminal charges during their childhoods. But one might ask whether we have significantly diluted the pool of meaningful events that children experience by broadening the definition of exposure and whether policy makers should worry about these new measures.

To explore this concern, we evaluate how the correlation of exposure with various measures of childhood well-being varies based

27. [Online Appendix](#) Figure A6 shows similar qualitative patterns when restricting to just exposure from biological parents. For comparison, [Wildeman and Andersen \(2015\)](#) estimates that 7.96% and 0.58% of children born in 1990 are exposed to a paternal or maternal imprisonment by the age of 14. Additional results by child race and potential caregiver sex are available in [Online Appendix](#) Figure A11.

on the underlying definition of what is counted. To accomplish this, we merge contemporaneous and cumulative exposure statuses over time to individual observations from children (ages 0 to 18) in respondent households from the 2005 to 2018 waves of the American Community Survey (ACS). We use the same exposure information built using the microdata previously discussed and link at the individual-level to integrate a range of well-being measures.²⁸ The outcomes we consider include household-level variables—a child's household poverty status and whether a grandparent has primary responsibility for their care; and human capital development measures—whether the child is behind in school given their age, and whether they have difficulty concentrating, remembering, or making decisions as a result of a mental or emotional condition.

Whether a child is exposed likely reflects preexisting differences in households that contribute to child outcomes ($Y_{i,t}$), so we estimate the correlation between survey-year biological parent exposure ($\text{Bio}_{i,t}$), survey-year nonbiological parent exposure ($\text{Other}_{i,t}$), presurvey biological parent exposure ($\text{Bio}_{i,\tau < t}$), and presurvey nonbiological parent exposure ($\text{Other}_{i,\tau < t}$) controlling for a range of observable characteristics: a third-order polynomial in household income at birth ($\phi(\text{Inc}_i)$), age-at-survey fixed effects (γ_a), fully saturated sex-by-race/ethnicity fixed effects ($\gamma_{r,s}$), survey-year fixed effects (γ_t), place-of-birth fixed effects (γ_g), and year-of-birth fixed effects (γ_{by}).²⁹ Our estimating equation is:

$$Y_{i,t} = \beta^1 \text{Bio}_{i,t} + \beta^2 \text{Other}_{i,t} + \beta^3 \text{Bio}_{i,\tau < t} + \beta^4 \text{Other}_{i,\tau < t} + \phi(\text{Inc}_i) \\ + \gamma_a + \gamma_{r,s} + \gamma_t + \gamma_g + \gamma_{by} + \epsilon_{i,t}.$$

To the extent that omitted variable bias contaminates our regression coefficients, one would expect this to lead to relatively worse correlations for contemporaneous events, events associated with biological parents, and incarceration spells. For example, children growing up in households with biological parents who

28. To avoid confusion, our exposure variables in this exercise do not reflect cohort-level exposure, but instead whether that specific child respondent to the ACS had a parent or other potential caregiver involved in the justice system in or before the year of their survey response. An adult in the household would complete the ACS and respond to the questions for the child, including schooling information and cognitive difficulty.

29. In addition, standard errors are clustered by the commuting zone of birth. Regressions are weighted by ACS person weights. Household income at birth is measured in the same way as described for Figure III, Panel B.

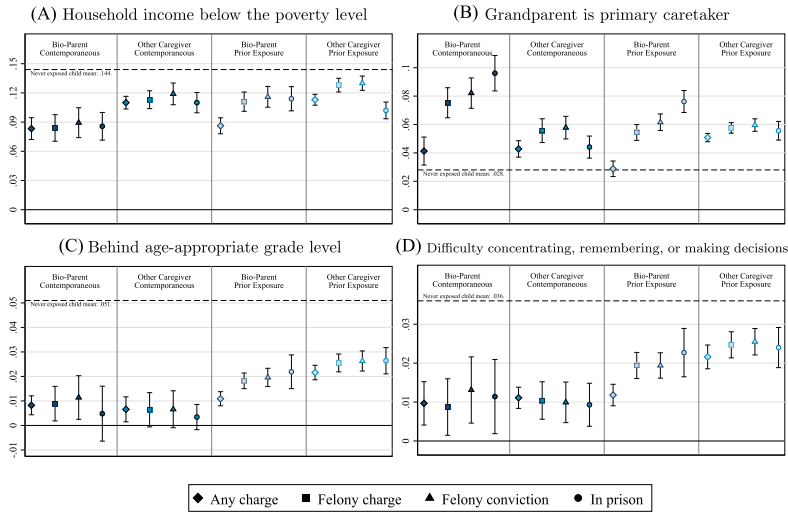


FIGURE IV

Correlations between Indirect Exposure and Child Outcomes

Source. Authors' estimates from the 2005–2018 American Community Survey (outcomes), Census Numident (year of birth, sex, mortality), Census BestRace files (race/ethnicity), CJARS (potential caregiver exposure and child adult charges), and CJARS relationship crosswalk (identify potential caregivers and measure child fertility).

Estimates and sample sizes have been rounded to preserve confidentiality. Estimates along with 95% confidence intervals are shown. All regressions with controls include fixed effects for the county of birth, birth year, and race/ethnicity interacted with gender along with a third-order polynomial for average adjusted gross income in the first five years of the child's life, as measured by IRS Form 1040. Standard errors are clustered by the commuting zone of birth. Person weights provided by the American Community Survey are used. The sample consists of individuals in the Census Numident 1999–2005 birth cohorts in CJARS-covered geographies from birth until X , where X represents years since birth at the time of survey response (0–18) with the place of birth still covered or year 2018. Contemporaneous exposure to an event is measured in the year of the survey, and prior exposure is measured from birth until the year before the survey response. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval number CDBRB-FY22-ERD002-009.

go to prison likely have more unobserved factors that inhibit their growth and development compared with children with less serious, less direct, and less recent forms of exposure (e.g., their coresiding uncle who was once charged with possession of marijuana when they were two years old).

Figure IV plots the estimated coefficients between child outcomes and contemporaneous (in the survey year) and

cumulative (prior to the survey year) criminal justice exposure for the four event types (charge, felony charge, felony conviction, and prison) for biological parents and other potential caregivers. The estimated relationship between exposure and household poverty status (Panel A) is remarkably similar, regardless of the specific exposure definition. Whether exposure reflects charges or incarceration, biological parents or other potential caregivers, or current or past events, the estimates consistently fall in the range of 60% to 90% of the never-exposed child mean, with many of the coefficients being statistically indistinguishable. These findings are consistent with, although obviously not definitive causal proof of, the hypothesis that part of the negative economic effects of the justice system on families operates through the channel of scarring effects of criminal records. Whether grandparents are identified as the child's primary caregiver (Panel B), however, does seem to be both more intimately connected to the most serious forms of justice contact like felony convictions and incarceration, and be most strongly associated with the justice involvement of biological parents over other potential caregivers. This clear pattern aligns with the legal processes in place for child welfare investigations, child removal, and resulting kinship care placements.

The next two panels show a strikingly similar pattern of evidence regarding human capital formation during childhood. Whether the child is behind in age-appropriate grade level (Panel C) or is reported to have difficulty concentrating, remembering, or making decisions resulting from a mental or emotional condition (Panel D), the strongest negative correlations are associated with cumulative rather than contemporaneous exposure to the justice system. Whether the source originated from a biological parent or another adult in the household, or whether the type of exposure was incarceration or something less serious, the estimated relationships are quite similar.

Overall, we interpret this body of evidence to show that policy makers should carefully consider our more broadly defined measures of child indirect exposure to the U.S. justice system. Whether the result of selection in justice involvement or a consequence of justice involvement, these new measures correctly identify a substantially larger population of vulnerable children.

VIII. THE LONG-TERM EFFECTS OF GROWING UP IN HIGH-EXPOSURE AREAS

Our final empirical analysis examines how children who grow up in areas with a relatively more expansive criminal justice system fare when reaching young adulthood. To accomplish this task, we first document substantial geographic variation in indirect exposure among children across U.S. counties. With that in hand, we employ a “movers analysis,” which seeks to eliminate many candidate sources of confounding variation by focusing on the subsample of children who are born in one place but move during their childhoods into higher and lower exposure areas (Chetty, Friedman, and Saez 2013; Finkelstein, Gentzkow, and Williams 2021; Chetty and Hendren 2018a, 2018b). This work is complemented by two additional empirical exercises, the first focusing on the duration of living in a high-exposure county among movers and the second restricting variation to differences in exposure duration among biological siblings.

VIII.A. County-Level Variation in Exposure

As previously discussed, geographic coverage by procedural domain varies in CJARS. To maximize potential comparisons, we construct an index of intensity of criminal justice child exposure at the county level that leverages both felony conviction and incarceration exposure rates for children born in the 1999–2005 cohorts. We first construct race (r) by county-of-birth (g) z -scores for indirect felony conviction and incarceration exposure rates (i.e., mean of 0, standard deviation of 1). We then average the z -score variables where both are available, or substitute in whichever z -score component is available when one is missing due to geographic coverage. In the final step, we rescale the composite z -scores into the unit interval by subtracting off the minimum value and dividing by the distance between the max and min values. We create the index using the following equations:

$$\text{Exposure index}_{g,r} = \frac{Z_{g,r} - \min(Z)}{\max(Z) - \min(Z)}, \text{ where}$$

$$Z_{g,r} = \begin{cases} Z_{g,r}^{\text{Inc}} & \text{if missing } Z_{g,r}^{\text{Fel Conv}} \\ Z_{g,r}^{\text{Fel Conv}} & \text{if missing } Z_{g,r}^{\text{Inc}} \\ \frac{Z_{g,r}^{\text{Inc}} + Z_{g,r}^{\text{Fel Conv}}}{2} & \text{otherwise} \end{cases},$$

$$Z_{g,r}^{\text{Inc}} \equiv \frac{\text{Exposure}_{g,r}^{\text{Inc}} - \text{Exposure}^{\text{Inc}}}{\text{st dev}(\text{Exposure}^{\text{Inc}})}, \quad \text{and}$$

$$Z_{g,r}^{\text{Fel Conv}} \equiv \frac{\text{Exposure}_{g,r}^{\text{Fel Conv}} - \text{Exposure}^{\text{Fel Conv}}}{\text{st dev}(\text{Exposure}^{\text{Fel Conv}})}.$$

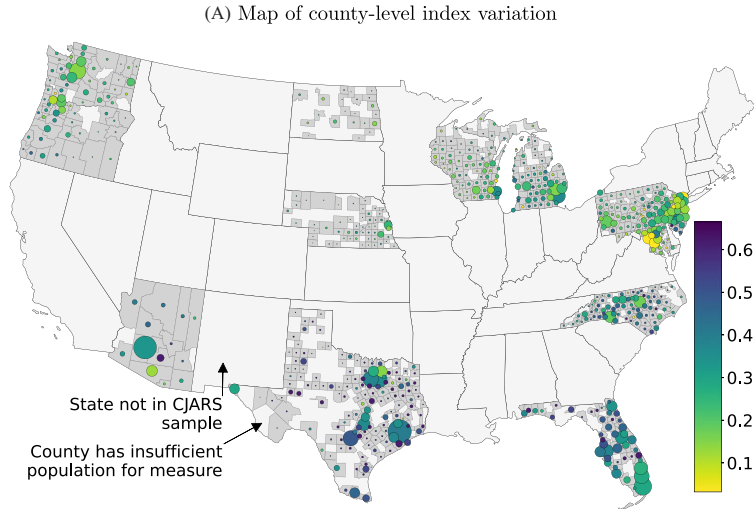
Although it would be preferable to avoid missing values, among the 404 counties where we observe both types of exposure, there is a tight correlation (see [Online Appendix Figure A12](#)), which suggests that this is a reasonable empirical strategy to maximize geographic coverage.

[Figure V](#) shows a map of the geographic variation we observe in the modeled index as well as its relationship with county-level measures of nonmodeled felony conviction and incarceration exposure rates. Overall, we observe substantial geographic heterogeneity. Children born in the 75th versus 25th exposure percentiles have a 9.5 and 6.8 percentage point (78% and 156%) higher likelihood of being exposed through adults in their household to a felony conviction and incarceration event, respectively. At the extremes, there are 50 and 35 percentage point gaps in felony conviction and incarceration exposure rates for children growing up in counties at the very top of the index compared with those at the bottom of the distribution.

As shown in the map, some of this is driven by between-state variation. Texas and Florida exhibit substantially higher exposure rates compared with New Jersey and Washington. That said, there are also clear differences within states (e.g., Miami-Dade versus Tampa, Newark versus Camden, or Dallas versus San Antonio). Such differences do not appear solely driven by variation in the racial composition across counties, as we observe similar geographic patterns when restricting to just white or Black children (see [Online Appendix Figure A13](#)). Together, these highlight the fundamental role that state and local actors/policy makers play in the functioning of the highly decentralized U.S. justice system.

VIII.B. Movers Analysis

To assess whether geography exerts a plausibly causal influence on exposure to the justice system and what effect that may have on the long-term trajectories of children, we turn to a movers analysis. The thought experiment behind this exercise



(B) Relationship between exposure index and rates of felony convictions and prison incarceration

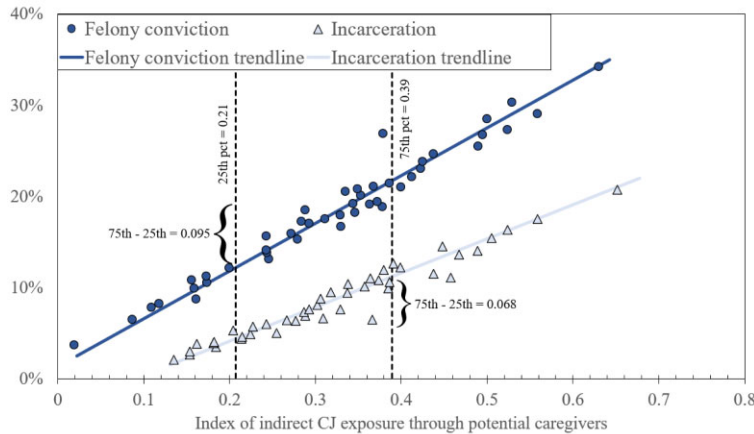


FIGURE V

County Variation in Degree of Child Indirect Exposure Rates

Source. Authors' calculations from the Census Numident, Census BestRace files, CJARS, and CJARS relations and residence crosswalks.

Estimates and sample sizes have been rounded to preserve confidentiality. The sample consists of individuals in the Census Numident 1999–2005 birth cohorts in CJARS-covered geographies. Map markers are sized according to 2021 Census Bureau county total population estimates. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval number CBDRB-FY23-0138.

is to track two children, born in the same original county, one of whom moves to a high-exposure county while the other moves to a low-exposure county. Does the child who moves to a high-exposure county go on to have a higher likelihood of an exposure event? Do we observe differences in their adult outcomes?

To estimate the effect of growing up in places with higher rates of justice exposure, we focus on children who move to a new commuting zone after birth exactly once by age 17, following Chetty and Hendren (2018a, 2018b). We expect earlier moves to have a stronger effect due to longer exposure during childhood. Our estimating equation is the following:

$$Y_{i,g,r,c} = \beta \text{ Exposure index}_{c,r} + \delta X_c + \phi(Inc_i) + \gamma_{r,s} + \gamma_{by} \\ + \gamma_{g,r} + \epsilon_{i,c},$$

where subscript g represents the county of birth and subscript c represents the destination county. The focal coefficient is β , which measures the correlation of outcome Y with destination county c 's prevailing exposure index, controlling for other county characteristics X_c . We also include a third-order polynomial in household income at birth ($\phi(Inc_i)$), race by sex fixed effects ($\gamma_{r,s}$), birth year fixed effects (γ_{by}), and county of birth by race fixed effects ($\gamma_{g,r}$). To maximize our sample, we consider all children in the United States who move into CJARS-covered states, not just those who are born in our covered jurisdictions.

Including X_c in the regression helps us evaluate whether the effects of moving to a high-exposure county may be in fact the product of the justice system itself, or alternatively the result of other county policies or characteristics that happen to be correlated with exposure rates. The county characteristics we include, drawn from Chetty et al. (2014), are child upward economic mobility, metro area indicator, fraction Black, racial segregation, income segregation, fraction with commute less than 15 minutes, local tax rate, school expenditure per student, manufacturing employment share, growth in Chinese imports 1990–2000, migration inflow rate, migration outflow rate, and fraction foreign born. With the exception of the child upward economic mobility measure, we focus on variables that we believe may not be potentially affected by the justice system (e.g., education spending is included while child poverty rates are

excluded). The correlation matrix between the county covariates and the exposure index is shown in [Online Appendix Table A1](#).

[Table I](#) shows the first-stage relationship between moving into a higher-exposure index county and experiencing an indirect exposure event. Among moving children, those who go to places where households have higher likelihoods of being justice-involved are significantly more likely to have new postmove indirect exposure incidents stemming from adults in their household on all observed justice events: criminal charges, felony charges, felony convictions, and incarceration. The magnitude of these coefficients represent 42% and 35% of the observed felony conviction and incarceration exposure gaps for children born in counties at the top and bottom of the index distribution. By construction, we should expect these effects to be less than 100% since our sample of moving children spends significantly less of their childhoods in the destination counties compared to children actually born in these counties and thereby have fewer years to accumulate indirect exposure in these new environments. This exact dynamic is confirmed in the even columns of [Table I](#), where children who move at younger ages are more likely to have new postmove exposure incidents after moving to a higher index county.

Unfortunately, the birth cohorts in our focal sample are too young to observe as adults.³⁰ Instead, we turn to the slightly older 1993 to 1996 birth cohorts, who we can observe at least through their mid-twenties.³¹ The assumption we make by using this substitution is that the geographic variation measured for later birth cohorts still provides meaningful identifying information for mover children born up to a decade earlier. We measure adult outcomes at age 26, including ever having received an adult criminal charge, employment and wages

30. In [Section VII](#), we consider child outcomes available in the ACS. While bringing those outcomes into the movers analysis would be quite interesting, the samples become too small when restricting to postmove ACS responses in CJARS-covered states, especially since some of our focal birth cohorts only reach age 13 in the most recently available ACS data.

31. Our ability to measure residences on an annual basis becomes much better starting in the year 1998, which means that for some children born between 1993 and 1996, we will know that they have moved during their early childhood but not exactly when. Thus, in the analysis, age at the time of the CZ move is grouped together for children moving between the ages of 1 through 8, 9 through 12, and 13 through 17.

TABLE I
THE EFFECT OF MOVING TO A HIGH-EXPOSURE COUNTY ON A CHILD'S INDIRECT EXPOSURE THROUGH BIOLOGICAL PARENTS OR CORESIDENT ADULTS

	Criminal charge (1)	Criminal charge (2)	Felony charge (3)	Felony charge (4)	Felony conviction (5)	Felony conviction (6)	Incar- ceration (7)	Incar- ceration (8)
Exposure index	0.235*** (0.030)		0.203*** (0.019)		0.222*** (0.016)		0.131*** (0.012)	
Move $\leq 8 \times$ Index		0.340*** (0.034)		0.274*** (0.022)		0.293*** (0.019)		0.173*** (0.014)
Move 9–12 \times Index		0.104*** (0.036)		0.136*** (0.024)		0.166*** (0.021)		0.108*** (0.017)
Move 13–17 \times Index		0.079** (0.033)		0.065*** (0.024)		0.066*** (0.019)		0.023** (0.011)
Observations	364,000	364,000	364,000	364,000	364,000	364,000	377,000	377,000
Sample mean	0.271	0.271	0.140	0.140	0.118	0.118	0.059	0.059

Source. Authors' estimates from CJARS (county-level potential caregiver exposure and household adult criminal justice events), IRS 1040 tax records (control variable for income), CJARS relationship crosswalk (identify potential caregivers), Census BestRace files (race/ethnicity), and the Census Numident (year of birth, sex).
Notes. The sample consists of individuals born between 1999 and 2005 who change CZs once by age 17 into a CJARS-covered county, as measured in the CJARS residence crosswalk. The index of CJ exposure is a standardized measure of county-level felony conviction and incarceration exposure normalized between 0 and 1. Exposure outcomes are measured for linked adults during the postmove period using CJARS. Each regression controls for sex by race, county of birth by race, year of birth fixed effects, and a cubic polynomial of household income at the time of birth (average Form 1040 AGI over the first five years). All controls are interacted with indicators for the timing of the move, as measured in three age categories (≤ 8 , 9–12, 13–17). Standard errors are clustered at the CZ of birth. All results were approved for release by the U.S. Census Bureau. Data Management System number P-7500378 and approval number CDBDRB-FY23-0235. * $p < .1$, ** $p < .05$, *** $p < .01$.

at age 26, teen parenthood, and mortality.³² Together, these provide a broad array of outcomes to measure well-being in early adulthood.

Table II shows the results of this exercise. For each outcome, the first two columns show the overall effect of moving into a high-exposure county without and with controls for county characteristics. Although not definitive proof, our findings show a remarkably stable relationship whether we do or do not include this vector of county covariates. This is evidence that we interpret as consistent with a potential causal effect of the justice system on children's life cycle outcomes. After controlling for other destination county traits, we find that moving into a high-exposure county significantly worsens future adult outcomes for children. For example, moving into a 75th versus 25th percentile county, which would raise the likelihood of exposure to a postmove felony conviction or incarceration by 4.0 percentage points (34%) and 2.4 percentage points (40%), respectively, increases the likelihood that a child has their own criminal justice involvement as an adult by 1.1 percentage points (8%), reduces employment by 0.9 percentage points (−1.1%), increases the likelihood of teen parenthood by 1.9 percentage points (26%), and increases the likelihood of death by age 26 by 0.05 percentage points (6.4%). Furthermore, wages at age 26 decline by approximately 13% over this same interval, suggesting significant movement on the intensive margin of work.

Similar to the first-stage exercise, we find that children who moved at earlier ages are most affected by the exposure rate of their destination county. In fact, the estimated relationship between destination exposure rates and adult outcomes for young movers (ages 1–8) is roughly twice the size for all outcomes compared to teenage movers (ages 13–17). This suggests that the poor adult outcomes we observe are not simply a consequence of an unproductive or unhealthy adult environment, but also of how that context contributes to child development specifically. Although we lose some precision due to the drop in sample size, this same qualitative pattern is observed for most outcomes when including biological sibling fixed effects, where identification is based solely on the relative age at the time of the move in a

32. For later birth cohorts in this sample, we use the oldest observed age given available data, which makes a small share of our observations younger than 26.

TABLE II
THE EFFECT OF MOVING TO A HIGH-EXPOSURE COUNTY ON ADULT OUTCOMES

	Criminal charge by age 26			W-2 employment at age 26				IHS(W-2 wages at age 26)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exposure index	0.093*** (0.014)	0.062*** (0.014)			-0.054*** (0.006)	-0.052*** (0.006)			-0.85*** (0.08)	-0.74*** (0.08)		
Move $\leq 8 \times$ Index			0.080*** (0.015)	0.083 (0.074)			-0.070*** (0.007)	-0.148*** (0.042)			-1.00*** (0.08)	-1.58*** (0.48)
Move 9–12 \times Index			0.054*** (0.016)	0.115 (0.090)			-0.039*** (0.009)	-0.007 (0.048)			-0.53*** (0.10)	-0.32 (0.54)
Move 13–17 \times Index			0.038* (0.022)	0.159 (0.108)			-0.037*** (0.011)	-0.011 (0.052)			-0.52*** (0.14)	-0.43 (0.55)
Observations	814,000	779,000	779,000	98,500	1,497,000	1,412,000	1,412,000	228,000	1,497,000	1,412,000	1,412,000	228,000
Sample mean	0.133	0.137	0.137	0.115	0.852	0.851	0.851	0.863	8.93	8.92	8.92	9.10
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
County controls		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bio sibling fixed effects				Y				Y				Y

TABLE II
CONTINUED

	Teen parent			Death by age 26				
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Exposure index	0.122*** (0.006)	0.103*** (0.006)			0.0024** (0.0010)	0.0029*** (0.0011)		
Move ≤ 8 × Index			0.127*** (0.007)	0.081** (0.035)			0.0044** (0.0017)	0.0254** (0.0119)
Move 9–12 × Index			0.098*** (0.008)	0.021 (0.042)			0.0014 (0.0022)	0.0192 (0.0133)
Move 13–17 × Index			0.063*** (0.008)	0.018 (0.041)			0.0017 (0.0026)	0.0203 (0.0142)
Observations	1,497,000	1,412,000	1,412,000	228,000	1,497,000	1,412,000	1,412,000	228,000
Sample mean	0.069	0.071	0.071	0.058	0.008	0.008	0.008	0.007
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y
County controls		Y	Y	Y		Y	Y	Y
Bio sibling fixed effects				Y				Y

Source. Authors' estimates from CJARS (county-level potential caregiver exposure and child's adult charges), IRS W-2 and 1040 tax records (outcome and control variable for income), CJARS relationship crosswalk (identify potential caregivers and measure child fertility), Census BestRace files (race/ethnicity), the Census Numident (year of birth, sex, mortality), and geographic characteristics from Chetty et al. (2014).

Notes. The sample consists of individuals born between 1993 and 1996 who change CZs once by age 17 into a CJARS-covered county, as measured in the CJARS residence crosswalk. The index of CJ exposure is a standardized measure of county-level felony conviction and incarceration exposure normalized between 0 and 1. Outcomes include receiving a criminal charge (CJARS), employment and the inverse hyperbolic sine transformation of wages (W-2 tax records), teen parenthood (CJARS relationship crosswalk), and mortality (Census Numident). Each regression controls for sex by race, county of birth by race, year of birth fixed effects, a cubic polynomial of household income at the time of birth (average Form 1040 AGI over the first five years), and a vector of county characteristics (where noted). All controls are interacted with indicators for the timing of the move, as measured in three age categories (≤ 8, 9–12, 13–17). Standard errors are clustered at the CZ of birth. All results were approved for release by the U.S. Census Bureau. Data Management System number P-7500378 and approval number CDBRB-FY23-0235. * $p < .1$, ** $p < .05$, *** $p < .01$.

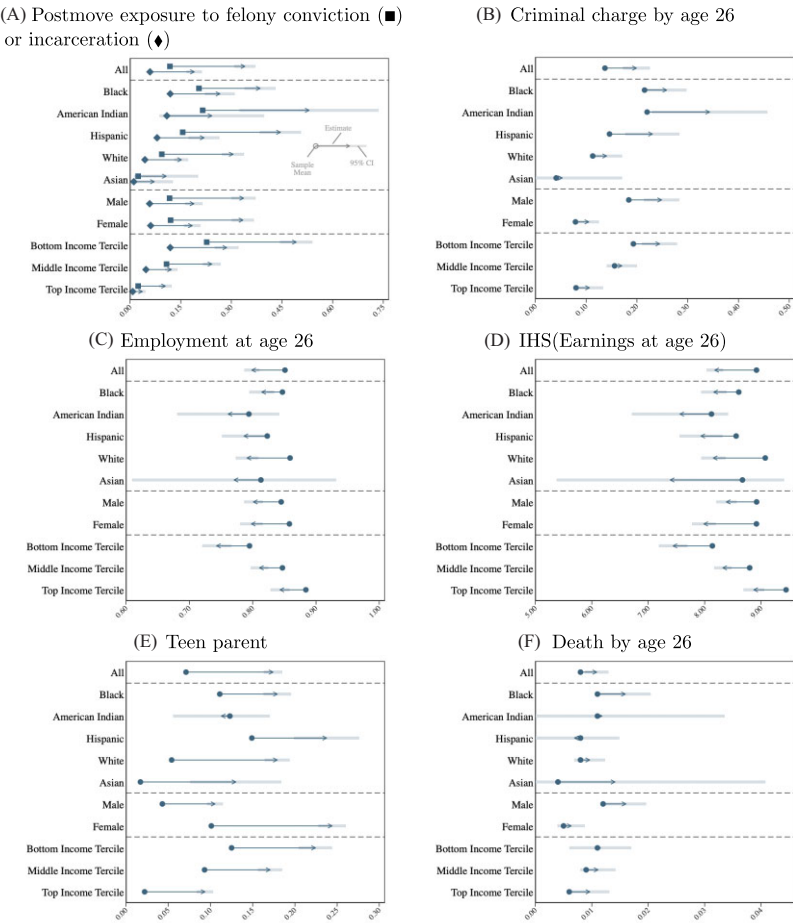


FIGURE VI

The Effect of Moving to a High-Exposure County, by Demographic Group

Source. Authors' estimates from CJARS (county-level potential caregiver exposure and child's adult charges), IRS W-2 and 1040 tax records (outcome and control variable for income), CJARS relationship crosswalk (identify potential caregivers and measure child fertility), Census BestRace files (race/ethnicity), the Census Numident (year of birth, sex, mortality), and geographic characteristics from Chetty et al. (2014).

FIGURE VI

(Continued) Coefficient plots show the sample mean, estimated coefficients on destination county exposure index among movers, and corresponding 95% confidence intervals (censored at zero for readability). The sample consists of individuals born between 1999 and 2005 (Panel A) or between 1993 and 1996 (Panels B–F) who change CZs once by age 17 into a CJARS-covered county, as measured in the CJARS residence crosswalk. The index of CJ exposure is a standardized measure of county-level felony conviction and incarceration exposure normalized between 0 and 1. Exposure outcomes are measured for linked adults during the postmove period using CJARS. Outcome variables are receiving a criminal charge (CJARS), employment and the inverse hyperbolic sine transformation of wages (W-2 tax records), teen parenthood (CJARS relationship crosswalk), and mortality (Census Numident). Each regression controls for sex by race, county of birth by race, year of birth fixed effects, a cubic polynomial of household income at the time of birth (average Form 1040 AGI over the first five years), and a vector of county characteristics (Panels B–F only). All controls are interacted with indicators for the timing of the move, as measured in three age categories (≤ 8 , 9–12, 13–17). Standard errors were clustered at the CZ of birth. All results were approved for release by the U.S. Census Bureau, Data Management System number P-7500378 and approval number CBDRB-FY23–0235.

family unit, holding fixed the destination county and underlying household circumstances or reason for the move.³³

Figure VI disaggregates this exercise by child's race/ethnicity, child's gender, and household income at birth. Low-income, Hispanic, and American Indian children's postmove exposure appears to be especially influenced by prevailing local conditions, showing above-average first-stage relationships, whereas high-income and Asian children show significantly lower responsiveness. All children appear negatively affected by moving to high-exposure counties, although results for Asian children are fairly imprecise. Following the pattern in the first stage, low-income, Hispanic, and American Indian children are most likely to go on to have their own criminal charges by age 26 when moving to a high-exposure county. For employment and earnings, low-income, white, and female children appear to be most negatively affected by prevailing local conditions. Increases in teen parenthood rates are most strongly associated with female, white, and low-income children. In contrast, our findings on early life mortality by age 26, however, appear to be largely driven by Black and male children.

33. By definition, the sibling fixed effect specification restricts to children with at least one sibling. In addition, we exclude the small proportion of children matched to more than 10 siblings for this specification.

This analysis provides evidence consistent with a causal relationship between widespread household justice exposure in U.S. communities and harms to future generations that are borne out over the course of the life cycle. Given the socioeconomic and racial disparities in exposure previously discussed, the U.S. justice system could be an important factor in propagating economic inequality and racial inequities.

IX. CONCLUSION

Despite significant, long-standing interest from researchers and policy makers, the scope and impact of indirect exposure of children to the U.S. justice system through adults in their households has been challenging to measure because of a variety of data limitations. First, it is difficult to observe the relevant caregivers over the course of a child's life, particularly in light of changing demographic trends in household composition. Second, criminal justice records are not integrated across state and local agencies, creating significant barriers to observe adult justice involvement over time and across geography. To overcome these challenges, we have built residence and familial crosswalks in the Census Bureau's Data Linkage Infrastructure that leverage restricted-access microdata from surveys, federal tax forms, and public program enrollment records, and then link them to integrated and harmonized justice records available through CJARS.

Using this new data infrastructure, we produce novel measures of indirect exposure of children through parents and adult household members to charges, felony charges, felony convictions, and incarcerations. For children born between 1999 and 2005, we find that 9% of children have had an exposure to prison, 18% to a felony conviction, and 39% to any criminal charge over the course of childhood. These prevalence rates are substantially larger than previous estimates focused primarily on parental incarceration.

We document important differences by race, which have significant implications for policies related to child well-being and persistent intergenerational inequalities. For example, Black children have the highest rates of indirect exposure to prison (20%), felony conviction (35%), felony charges (42%), and any criminal charge (62%). We document similarly high rates for American Indian/Alaska Native children, a population rarely studied, with corresponding estimates of 15%, 29%, 34%, and 60%. These estimates stand in stark contrast to those of white and Asian children,

who have the lowest rates of household contact with the justice system, with 6% and 2% of white and Asian children exposed to prison and 32% and 17% of white and Asian children exposed to any charge during childhood, respectively.

To gauge whether such larger prevalences are a by-product of expanding our inclusion criteria to less consequential shocks, we merge individual-level exposure information to ACS survey responses. We regress measures of childhood well-being on varying exposure definitions, and find consistent strong negative relationships with poor outcomes regardless of what criteria defined an exposure event. The resulting implication is that broader definitions, which are orders of magnitude larger, remain valuable predictors of childhood vulnerability.

Finally, we document substantial geographic heterogeneity in exposure rates, which we leverage in a movers analysis to assess the causal effect of growing up in a high-exposure area. Children who move into high-exposure counties grow up to have significantly worse lives: higher crimes rates, lower employment and earnings, higher risk of becoming a teen parent, and greater likelihood of death by age 26.

Taken together, our findings indicate that indirect exposure of children to the justice system is both widespread and potentially consequential. Given the scope of exposure and its disparate racial nature, the justice system should become a first-order concern for those interested in economic inequality, intergenerational mobility, and racial inequities in the United States. Moreover, these results heighten the need for further research to better understand what factors have contributed to such widespread justice involvement for households with minor children and the implications for current and future generations.

SUPPLEMENTARY MATERIAL

An Online Appendix for this article can be found at *The Quarterly Journal of Economics* online.

DATA AVAILABILITY

The code underlying this article is available in the Harvard Dataverse, <https://doi.org/10.7910/DVN/NDJTWB> (Finlay, Mueller-Smith, and Street 2023).

U.S. CENSUS BUREAU, UNITED STATES
 UNIVERSITY OF MICHIGAN, UNITED STATES
 UNIVERSITY OF MISSOURI, UNITED STATES

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