Toxic neighborhoods and social mobility

April 8 2019, by Matt Miles

Aerial view of Chicago. Credit: Dicklyon - Own work, CC BY-SA 4.0

How much does growing up in a healthy and cohesive community, or lack thereof, contribute to later long-term economic and social success in adulthood? Quite a lot, it would seem. Two Harvard sociologists, Robert Manduca and Robert J. Sampson, sought to better understand the relationships at play among environment, community, poverty, race, violence and social mobility in their paper, "Punishing and toxic

neighborhood environments independently predict the intergenerational social mobility of black and white children," recently published in *PNAS*. Their work specifically references and builds on several recent landmark studies by fellow Harvard researcher Raj Chetty and colleagues.

The authors of this study [1], Manduca and Sampson, undertook their research against the background of data suggesting that growing up in areas of concentrated poverty, i.e., disadvantaged neighborhoods, is a major determinant of individual success later in life. They were especially interested in the earlier findings of Chetty et al. [2- 6] that black children from low-income communities were at a particular and distinct disadvantage when compared with whites from a similar background. Moreover when black children moved to better neighborhoods with the presence of a same-race father and low levels of poverty and white racism, these children did better for every year they spent in the better neighborhood. Yet as the Chetty studies found, there were "massive disparities" between blacks and whites in access to better quality neighborhoods likely to foster upward social and economic intergenerational mobility.

Manduca and Sampson looked at data from the Opportunity Atlas compiled by Chetty's group and based on that, developed a two-part mode of inquiry for their own study. For the first part, they looked at the negative roles that violence, incarceration and toxic lead exposure play in interfering with healthy child development and disrupting social mobility . For the second part, they examined the positive influence factors on children of cohesive communities, informal social control, trust among neighbors, and organizational participation. In contrast with the first set of negative factors, these previously unstudied characteristics of neighborhoods may be positively linked to an individual's success later in life.

The investigators used demographic data from Chicago, a typical large

American city with a variety of intensely racially segregated neighborhoods. Specifically, they looked at "Census tract-level estimates of child mobility in the city of Chicago, created from linked income tax and Census records with measures of the social and physical environment constructed from the Project on Human Development in Chicago Neighborhoods (PHDCN) and follow-ups." This dataset covers roughly 96% of the cohort of children born in Chicago between 1978 and 1983 and tracks their social progress into their 30s while measuring outcomes such as adult income, incarceration, teenage pregnancy, etc. The analysis specifically targets expected outcomes for children whose parents fall within the national 25th percentile.

Manduca and Sampson then applied statistical methods to these data to yield a number of independent and inter-related explanatory variables. In particular, they were interested in developing predictive models that would work in combination with traditional socio-demographic Census data, such as single parent status, to provide higher explanatory power to their research and future endeavors. Ultimately, they presented and compared data using two separate models—a Census model; and an expanded model which utilizes PHDCN measures, either separately or as a single factor. Here's what they found.

Because the neighborhoods of Chicago are so heavily segregated, it was nearly impossible to attempt a direct comparison of black and white boys from the same neighborhood. Furthermore, they found that the various neighborhoods which were divided along racial lines were distinct and "qualitatively different environments" where men raised in the 90th percentile of majority black tracts earned less than the 10th percentile in majority white tracts. With reference to the explanatory power of the two categories of environmental and social predictors for intergenerational social mobility, the results were generally in keeping with the study investigators expectations. That is, they found that intergenerational mobility was lower and incarceration and teenage

pregnancy rates were higher in childhood neighborhoods where social positives like social control and community organizations were absent or lacking, and where rates of violence, incarceration and lead exposure were pronounced.

With regard to black children specifically, the investigators offer some discussion of the predictive power and statistical significance of their expanded social and environmental criteria when used in conjunction with Census variables. The investigators found that the poverty rate had little explanatory power when environmental controls were added to Census data. But importantly they note that lead exposure, incarceration, and violence are tightly co-associated and can be used as a single "neighborhood harshness/toxicity" factor. Here it is associated with lower income mobility and higher teenage birth rates and adult incarceration. Less significantly, the strength of local social networks was found to predict lower teenage birth rates in black women.

Results were similar for white children, though incarceration rates could not be estimated for poor white boys. As with the results for black children, Manduca and Sampson found that the poverty rate had little explanatory power when environmental controls were added to Census data. Some subtle differences were revealed in the correlations between lead exposure, violence and incarceration, where these were found to be less highly correlated. On the other hand, violence was more predictive of future income; and lead exposure and incarceration were better predictors of teenage motherhood in white girls, as was the presence of social control. Neighborhood organizations were slightly associated with lower income rank.

The most alarming finding of this study however may be the racialized nature of exposure to neighborhood harshness/toxicity, as the investigators have defined this variable comprising lead exposure, violence and incarceration. While both black and white children were

found to suffer in neighborhoods with these conditions, black children in Chicago were exposed to them at an overwhelmingly disproportionate rate compared with white children. As the investigators note with regard to the magnitude of this disparity, "the most-exposed white tracts in our sample had levels comparable to the least-exposed black tracts."

In the Discussion section of their paper, Manduca and Sampson reiterate the utility of working with measures that account for punishing environments and supportive social organizations in addition to standard Census measures, as these offer increased explanatory power for predicting social and economic mobility. With regard to ameliorating the conditions driving these inequalities in income mobility, the authors conclude: "Past interventions that have cleaned up the physical environment and reduced toxic hazards indicate that environmental policy is in part crime policy. Our results suggest a broader conclusion: Reducing violence, reforming criminal justice through deincarceration, and maintaining environmental health together make for social mobility policy."

More information: 1. Robert Manduca and Robert J. Sampson. Punishing and toxic neighborhood environments independently predict the intergenerational social mobility of black and white children. *PNAS*. published ahead of print April 1, 2019 doi.org/10.1073/pnas.1820464116

2. Chetty R, Hendren N (2018) The impacts of neighborhoods on intergenerational mobility I: Childhood exposure effects. *Q J Econ* 133:1107–1162.

3. Chetty R, Hendren N, Katz LF (2016) The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment. *Am Econ Rev* 106:855–902.

4. Chetty R, Hendren N, Kline P, Saez E (2014) Where is the land of opportunity? The geography of intergenerational mobility in the United States. *Q J Econ* 129:1553–1623.

5. Chetty R, Hendren N, Jones MR, Porter SR (2018) Race and economic opportunity in the United States: An intergenerational perspective. (*National Bureau of Economic Research*, Cambridge, MA). Available at www.nber.org/papers/w24441.

6. Chetty R, Friedman JN, Hendren N, Jones MR, Porter SR (2018) The opportunity atlas: Mapping the childhood roots of social mobility. (*National Bureau of Economic Research*, Cambridge, MA). Available at www.nber.org/papers/w25147.