

Racial Differences in Human Capital Investments and Inequality Later In Life

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Extended Abstract

Social and racial inequality in the US persistently influences socio-economic outcomes. Blacks are 20 percentage points less likely than whites to graduate from college; are six times more likely to be incarcerated on a given day; tend to earn 25% less; and tend to live 3.8 fewer years. Likewise, Hispanics do not fare better than whites ([Fryer \(2011\)](#)). However, these racial differences in earnings, educational attainment, and health status decline or disappear once educational achievement is controlled for. Therefore, not only racial discrimination, but also disparities in skills¹ may drive racial differences in adult well-being. [Fryer \(2011\)](#) and [Heckman \(2011\)](#) show how racial disparities in cognitive and socio-emotional skills (i.e., motivation, attention, self-control, etc.) emerge early in life and persist into adulthood. Indeed, an interdisciplinary literature highlights the fundamental part that intelligence and cognition,² personality and behavioral traits,³ and

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¹With the term “skills” we refer to those personal abilities and capabilities that influence long term success.

²See [Cawley, Heckman, and Vytlačil \(2001\)](#) and [Jokela, Batty, Deary, Gale, and Kivimäki \(2009\)](#), among others.

³In the economics literature, these traits have been called non-cognitive skills. See [Cunha, Heckman, Lochner, and Masterov \(2006\)](#); [Roberts, Kuncel, Shiner, Caspi, and Goldberg \(2007\)](#); [Borghans, Duckworth, Heckman, and Ter Weel \(2008\)](#); [Hampson \(2008\)](#); [Almlund, Duckworth, Heckman, and Kautz \(2011\)](#).

childhood health⁴ play in determining an individual’s future well-being, and how investments and the family environment greatly affect skill development and subsequent inequalities.⁵

Our paper aims to understand how racial gaps in skills are formed, how they evolve throughout childhood, and how they contribute to inequality in long term outcomes. We will study racial differences in human capital formation within the context of family environments and parental investments, and examine how they affect early skills to produce subsequent human capital. The conceptual framework for this project builds on seminal works by [Cunha and Heckman \(2007b, 2008\)](#) and [Cunha, Heckman, and Schennach \(2010\)](#) on the technology of skill formation, which model the dynamic evolution of skills throughout life. According to their framework, the notion that “skills beget skills” interacts with family and environmental influences to explain the evolution of human capabilities. Thus, the dynamic process of human capital development perpetuates racial disparities in skills, family environments, and investments that arise early in life. These disparities then translate into later gaps in achievement and ultimately in gaps in adult socio-economic outcomes. The initial model assumes that skills have both cognitive and socio-emotional dimensions. In this project, we consider a third dimension: child health.⁶ More specifically, we explore how these varied skills are jointly formed and interrelate within different racial groups.

Using the rich information provided by the Children of the National Longitudinal Survey of Youth (CNLSY), we conduct a twofold empirical analyses. First, we describe the gaps in children’s skills and the evolution of family investments across childhood for white, black, and Hispanic families. Second, we systematically analyze how family investments interact with early skills to produce future

⁴See the epidemiological work of [Barker, Osmond, Winter, Margetts, and Simmonds \(1989\)](#); [Barker, Osmond, Golding, Kuh, and Wadsworth \(1989\)](#); and more recent work by [Gluckman and Hanson \(2006\)](#); [Case, Fertig, and Paxson \(2005\)](#); [Goodman, Joyce, and Smith \(2011\)](#); [Aizer and Currie \(2014\)](#); as well as literature reviews of [Currie \(2009\)](#); [Bleakley \(2010\)](#); [Currie and Almond \(2011\)](#)

⁵See, among others, [Currie and Almond \(2011\)](#); [Cunha and Heckman \(2007a\)](#); [Gluckman and Hanson \(2006\)](#); [Heckman \(2007\)](#); [Barker, 1995](#)

⁶In terms of theory, [Conti, Heckman, and Urzua \(2010\)](#), and [Heckman and Mosso \(2014\)](#) added health to the model of the technology of skill formation. To our knowledge, [Biroli \(2014\)](#) is the first to estimate empirically the importance of adding child’s health to the model. He used data from the United Kingdom’s Avon Longitudinal Study of Parents and Children (ALSPAC).

human capital. Since investments are not exogenously determined, to identify a causal relationship we rely on exogenous variation generated by changes in the Earned Income Tax Credit (EITC) at the federal and state level during late 1980's and 1990's. EITC affected family income and parental labor supply, exogenously changing time and resource constraints.

The EITC was first enacted in 1975 as a tax credit intended to aid lower-income working families. It was subsequently expanded in 1986, 1990, 1993, and 2001 in terms of the maximum benefit and the range of eligible families. In addition, throughout 1990's and 2000's several states adopted and expanded their own EITC, to “piggy-back” on the federal credit ([Michelmore \(2013\)](#)). We exploit both the federal EITC changes and the state adoptions as a source of exogenous variation in family investments in both time and resources. Changes in the EITC affected family income and parental labor decisions, which may have translated into changes in parental time and resources constraints that may have influenced parental investments in children. Prior literature has shown evidence that EITC expansions affected family socio-economic outcomes such as income, consumption, labor supply, and fertility (see [Barrow and McGranahan \(2000\)](#); [Eissa and Hoynes \(2006\)](#); [Hotz and Scholz \(2003\)](#)), which, in turn, is expected to influence family investments decisions.⁷ [Hoynes, Miller, and Simon \(2015\)](#) found impacts on children birth outcomes, while [Dahl and Lochner \(2012\)](#), [Maxfield \(2013\)](#) and [Michelmore \(2013\)](#) found effects on children test scores and educational attainment. Yet, few studies have examined how the EITC changes affected children's dynamic skill formation.

Overall, this project makes important contributions towards understanding how racial gaps emerge and persist from childhood into adulthood. While little literature about the role of family environment and investments in generating racial disparities exists, studies have shown that family dynamics are important sources of both inequality and opportunity. In fact, since the late 1960's Moynihan (1965) and Coleman (1966) brought the issue of family dynamics to the center of the debate on American inequality, stating: “Family matters, American families are in trouble, and families are the main drivers of children success in school.”⁸

⁷We will not be able to determine which of these mechanisms affected investments.

⁸[Heckman \(2011\)](#) pg. 78.

Since large inequalities in skills are present even when children begin school, it is necessary to first comprehend how families influence children, and then develop and improve social policies that can address the source of these inequalities. Furthermore, studying the role of disparities in family investments and skill formation can provide a microfoundation to the striking variation in neighborhood opportunities and intergenerational mobility found by [Chetty, Hendren, Kline, and Saez \(2014\)](#) and discussed in [Chetty and Hendren \(2015\)](#).

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