# Understanding Racial Differences in Educational Outcomes: An Examination of Positional, Relational, and Interactional Processes

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Extended Abstract

In this paper we draw on a recent wave of scholarship that calls for more sophisticated approaches to the measurement, modeling, and theories of race, including increased considered of what is meant by "race" and "race effects" in the sociological literature, as well as for a better understanding of how race may "matter" with regard to individuals' life chances. We draw upon this recent body of work to articulate a conceptual framework of the potential pathways (social contexts and processes) through which racial differences in educational outcomes are likely to be formed. We then present an empirical application of this framework in which we use data from the National Longitudinal Study of Adolescent Health (Add Health) and structural equation models to examine the direct and indirect paths through which race may be associated with educational achievement and attainment for adolescents. In doing so, we attempt to integrate a theoretically rich and reflexive conceptualization of race into a unified framework and modeling strategy that explicitly considers a wide range of ecological contexts and social processes that are salient to understanding racial differences in social and economic outcomes in the U.S. Although our conceptual framework has implications for considering racial differences across a wide range of well-being measures, we focus on racial gaps educational achievement and attainment because they are highly relevant to understanding how social inequality is produced and reproduced over time, which continues to be a central theme of much sociological research.

Our conceptual framework draws from and builds upon such prior conceptualizations of the various pathways through which race is theorized to be linked to education outcomes and incorporates these theoretical perspectives into a unified framework. Both our conceptual framework and our empirical model are grounded in

five primary principles: (1) a theoretically rich conceptualization of race; (2) a focus on social processes as the mechanisms through which race may influence educational achievement and attainment; (3) utilization of a mediation modeling strategy which corresponds to our conception of what race is and how it comes to matter for education; (4) identification of the direct and indirect pathways that underlie associations between race and education outcomes; and (5) incorporation of an ecological perspective that takes a holistic approach to examining the importance of multiple contexts that are likely to influence individuals' educational trajectories.

Whereas most prior studies either lack an explicit conceptualization of race or utilize a conceptualize race from a single perspective, we combine tenants from a number of theories of race into a multifaceted conceptualization of race. Our conceptualization is based in 5 basic assumptions: (1) race represents a socially constructed, rather than biologically determined, means of categorizing individuals; (2) race is constructed based on ideological principles that provide for a commonly accepted means of categorizing and classifying individuals; (3) race is structurally utilized to organize social relations; (4) racial categorizations are used to position individuals in social space; and (5) race is process-based and interactional in that it is enacted (influences individuals' life experiences) through a variety of social processes. On the whole, this framework implies that race becomes meaningful in daily life by influencing how one is positioned in a given social context (his or her structural location) based on current and historical processes affecting the allocation of and access to social and economic resources. It further suggests that three types of processes—structural/positional, relational, and interactional—determine the influence of an individual's racial classification in a society such as the U.S. where such classification forms an important basis for social closure, manifests in terms of both symbolic and social boundaries, and represents both a category of physical characteristics (e.g., skin color) or ancestry/heredity and also a self- or other-identified grouping of individuals who are defined by such factors.

The framework is ecological in nature such that adolescents are assumed to be situated within a dynamic and interactive system of social contexts and processes. We approach these contexts and processes as falling into three primary domains in which adolescents function and are likely to be influenced: families, schools, and neighborhoods. Within each domain, we distinguish between structural/positional

contexts, relational processes, and interactional processes such that the resulting model includes 9 sets of factors reflecting family position, family relationships, family interactions, school position, school relationships, school interactions, neighborhood position, neighborhood relationships, and neighborhood interactions. We expect that race will be associated with each of the 9 mediating factors and that each of these factors will in turn, predict educational achievement and attainment. Thus, our framework is designed to test the hypothesis that the relation between race and education is enacted through (mediated by) the social contexts and processes of focus.

To test this hypothesis, we utilize structural equation modeling to simultaneously obtain estimates of the direct effects of race on the outcome as well as estimates of all of the indirect effects. Breaking down the total association into its components in this way provides both a full and nuanced understanding of the relationship between race and the education outcomes, and one that matches how we hypothesize that race comes to matter. In the current analyses the ability to decompose the total association into component parts is especially important because of the complexity of the phenomena under investigation. A large part of this complexity is the result of the multiple mediating pathways (e.g. indirect effects) that are likely to be substantively important. By decomposing the total race effect into its component parts, we are explicitly seeking to understand the process of racial stratification in education by examining the mediating pathways through which race becomes influential for educational achievement and attainment.

We use data from the National Longitudinal Study of Adolescent Health (Add Health) Waves I-III. Add Health is a nationally representative study of adolescents who were in grades 7 through 12 in 1994. The sample for our empirical analyses was drawn from the restricted-use version of the core longitudinal sample of the 10,828 adolescents included in the original (Wave 1) Add Health in-home survey. The primary exclusion criteria for our analysis sample is that only those adolescents reporting their race as White, African American, Latino, or Asian were retained.

Our empirical application of this framework builds on previous scholarship in several ways. First, whereas most prior work has tended to focus on the moderating role of contextual variables or (less frequently) social processes, or on the mediating role of either family, school, or neighborhood characteristics, we are able to simultaneously examine the mediating role of multiple contextual and processual factors in each of

these domains. Furthermore, we are able to simultaneously assess the role of structural/positional context, relational processes, and interactional processes within each of the family, school, and neighborhood domains. We are aware of no existing study that has taken such a comprehensive approach. Finally, whereas most existing studies have focused on differences in educational achievement or attainment between only African Americans and whites, our analyses also considers Latinos and Asians.

Our analyses proceed by first decomposing the total race effect into the direct and indirect components. This first step is done to examine the extent to which race is a mediated phenomena. We then further decompose the estimated indirect effects by ecological context. Examining the indirect effects associated with each of the ecological contexts allows us to assess the relative contribution of each context to the mediation of the race effect. The final step of our analyses then breaks apart the three types of social mediators (structural/positional contexts, relational processes, and interactional processes) for each of the ecological contexts. This last step allows us to examine the effects associated with each type of mediator.

Table 1 shows the decomposition of the total race effect into the direct and indirect components for the attainment and achievement models. These results indicate that there are large total effects associated with racial category. For example, compared to whites, Blacks and Latinos in the sample completed about .6 and .9 fewer years of schooling, respectively, whereas asians completed about .5 more years of education. The pattern of total effects is similar for the achievement models which indicate that, on average Latino and Black adolescent have grade point averages that are about .3 points lower than those of whites, whereas Asians have mean grade point averages that are about .2 points higher than those of whites.

Looking next at the indirect effects shown in Table 2, we see that the estimated indirect effects make up a considerable portion of the total effects, meaning that a substantial amount of the association with these racial categories occurs through the social process mediators in the models. These results provide strong evidence in support of the conceptualization of race as being enacted through social processes. While the importance of race as a stratifying factor in education outcomes is taken as given, the innovation here is the focus on the route by which race comes to matter. As opposed to a focus on the direct effects of race, this model highlights the importance of the indirect meditational pathways through which race becomes salient. These indirect

effects are estimates of some of the social processes and mechanisms that turn race into a meaningful descriptor of individuals' educational experience.

Our findings highlight the importance of examining and decomposing the total associations linking racial categorization and educational outcomes. Estimation of only direct racial effects provides only a partial picture of how race matters. This paper is an attempt to more thoughtfully explore what it means for race to predict educational achievement and attainment, identify the proximate pathways through which racial disparities in outcomes occur, and provide empirical estimates to bolster the development of nuanced and complex theoretical understandings of the role of race in US society. In so doing, the paper aims to inform policymakers of these insights so that policies can be matched to the factors identified as most important for the enactment of race (i.e. making race salient) for education outcomes. The paper also seeks to provide a better understanding among social science researchers of the complexity of modeling race, so that the inclusion of race as a demographic predictor becomes a less automatic and more reflective decision that includes explicit consideration of the measurement, modeling, and interpretation of race.

Table 1.

| | Black | | Latino | | Asian | |
|---|---|---|---|---|---|---|
| | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| *Attainment: Years of Education* | | | | | | |
| Total | -.549*** | .141 | -.865*** | .118 | .521** | .150 |
| Indirect | -.584*** | .112 | -.691*** | .105 | .220* | .094 |
| Direct | .035 | .081 | -.175* | .087 | .301* | .123 |
| Chi-Square Test of Model Fit (df) p value | | | 2958.79 (145) .000 | | | |
| RMSEA | | | .044 | | | |
| *Achievement: High School Grades* | | | | | | |
| Total | -.308*** | .038 | -.298*** | .040 | .191** | .062 |
| Indirect | -.146*** | .028 | -.180*** | .023 | .071* | .031 |
| Direct | -.162*** | .033 | -.118** | .040 | .120* | .053 |
| Chi-Square Test of Model Fit (df) p value | | | 2951.15 (145) .000 | | | |
| RMSEA | | | .044 | | | |

*Notes:* N=10,116. Models estimated in Mplus 5.2 adjusting for complex sampling and weighting using TYPE = COMPLEX option, and using the MLR estimator. * p < .05 ** p < .01 *** p < .001