

BEHOLDING INEQUALITY:

Race, Gender, Physical Attractiveness, and Socioeconomic Status in the United States

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Introduction

Standard approaches to social inequality and stratification typically proceed from comparing various aggregates of individuals sorted by socio-politically salient social categories (e.g., race and gender) with respect to key outcomes such as educational attainment, health, or wages. Indeed, as Massey (2008: 1) explains, “Stratification refers to the unequal distribution of people across social categories that are characterized by differential access to scarce resources. The resources may be material, such as income and wealth; they may be symbolic, such as prestige and social standing; or they may be emotional, such as love, affection, and of course, sex.”

Research on social inequality and stratification then, typically seeks to find disparities between men and women or whites and African Americans with respect to these material and symbolic outcomes. Explicitly, or at the very least implicitly, the brunt of this research relies upon a micro-foundations of inequality that highlights how processes of stigmatization and discrimination in everyday life are significant factors impacting wellbeing, which help explain said disparities in life chances and various other important social outcomes.

Still, while it is certainly the case that there is considerable inequality associated with membership in key social categories (e.g., race, ethnicity, and gender), research also shows that differences in physical appearance, specifically, physical attractiveness also indulgently stratify life chances and outcomes (Hakim 2010). Researchers have found that physical attractiveness is significantly associated with: occupational status, wages and labor market outcomes in general (Hamermesh and Biddle 1994), wealth (Mears 2009), relationship length and quality (Yela 2001), being perceived as credible or having leadership ability (Goktepe and Schneier 1989; Madera et al. 2007), being judged to be fit and healthy (Weeden and Sabini 2005), self-esteem, and being socially desired by others (Anderson et al. 2010). In fact, one study even finds that wage returns to physical attractiveness

among high school graduates is actually larger than the returns for actual ability (Fletcher 2009). While a one-standard deviation increase in ability is associated with three to six percent higher wages, attractive or very-attractive individuals earn five to ten percent more than average-looking individuals (Fletcher 2009: 322).

Yet, even with these findings, the study of how physical attractiveness relates to earnings is underdeveloped compared to the voluminous literature on gender and ethnoracial inequality in earnings and other socioeconomic outcomes (especially within sociology as a discipline). By contrast, relatively more attention to how physical attractiveness relates to earnings has been paid in economics. This body of work indicates that physical attractiveness has long played a prominent role in how people are treated in a society (Liu and Sierminska 2014). A key insight, however, of sociological approaches to social inequality is the importance of capturing intersectionality. That is, how do categories of race and gender, for example, combine in complex ways to produce and reproduce inequalities (Collins 1990).

Bringing theoretical insights from intersectionality and social cognition to bear on how the body relates to social inequality, this study uses nationally-representative data from the United States to examine how race/ethnicity, gender, and physical attractiveness interact/intersect to affect earnings. Notions of “beauty,” are relational and socio-historically contingent and are often indelibly shaped by ethnoracial background, socioeconomic status, gender, and a host of other factors. Recognizing contingency and relationality in the examination of physical attractiveness is key (for examples on this front, see recent qualitatively oriented research on aesthetic labor, e.g., Williams and Connell 2010, Otis 2011, and Mears 2011, 2014). Extending existing research on “beauty” premia, instead of solely using race/ethnicity and gender as “controls” (see Fletcher 2009), or only examining differences with respect to gender (Wong and Penner 2016), we examine how the consequences of physical attractiveness for earnings is contingent upon race/ethnicity and gender. Specifically, building on existing research we directly examine whether “beauty” is more or less consequential for certain race/gender group combinations. In so doing, the present study is situated to make compelling contributions to ethnoracial, gender, bodily inequalities, while providing needed empirical bases for ongoing theoretical elaborations of theories of intersectionality (McCall 2005).

Data

The National Longitudinal Study of Adolescent to Adult Health

To address our research question, we use data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is an ongoing, nationally-representative survey of a group of individuals who were in grades 7 to 12 in 1994 (Harris et. al. 2009). In the original sample, 20,745 individuals, from 132 US schools, were selected for in-depth home-interviews. Add Health currently includes four waves of data, which span the years 1994-2008: Waves 1 (W1: 1994-95), 2 (W2: 1996), 3 (W3: 2001-02), and 4 (W4: 2007-08). In W4, all respondents were aged between 24 and 32 years old. For more information on Add Health’s study design, see Harris et. al. (2009).

Measurement

Our response variable, *income*, is a numerical measure of W4 annual earnings. At W4, individuals were asked, “Over the past year, how much income did you receive from personal earnings before taxes, that is, wages or salaries, including tips, bonuses, overtime pay, and income from self-employment?”, and their response was taken as a measure of their annual income (in dollars). Individuals who were either not working, or refused to answer this question were excluded from the analysis. Additionally, given that a handful of income values were extreme (relative to the rest of the sample’s income-distribution), and an exploratory analysis which suggested that these extreme values may be outliers,¹ we truncate the sample to exclude individuals who fell outside of the 1st-99th percentiles of this income measure.

Our focal predictor, *physical attractiveness*, is constructed from information provided by Add Health interviewers. At W3, interviewers were asked to evaluate “How physically attractive is [their] interviewee?” Individuals who were assessed as possessing above average physical attractiveness (i.e., those rated either *attractive*, or *very attractive*) were coded as 1, and individuals who were assessed

¹In that a separate set of parameters are needed to describe the relationship between income and attractiveness among individuals with extreme incomes. For instance, how attractiveness factors into generating an income of \$75,000 per year likely differs from how income factors into generating an income of \$999,995.

as being *about average, unattractive, or very unattractive* were coded as 0.

In addition to physical attractiveness, *sex* and *race/ethnicity*, are key variables in our analysis. *Sex*, a measure of one’s self-reported sex category at W1, is coded as 0 for males, and 1 for females. *Race*, a measure of a respondent’s self-reported race at W1, is coded as 1 if Non-Hispanic White, 2 if Non-Hispanic Black, and 3 if Hispanic. As controls, we include measures of each respondent’s: *W4 educational attainment* (ranging from 1 if an individual has an 8th grade or less level of educational attainment, to 9 if a individual has a post-graduate degree or more), *education of highest educated resident parent/guardian* (ranging from 0 if one’s highest educated parent/guardian has no formal educational attainment to 7 if they have more than a Bachelors degree), *W4 age* (in years), *W4 occupation* (1 if working in a managerial/professional occupation; 0 if otherwise), *W4 marital status* (1 if married; 0 if otherwise), and *US born status* (1 if born in the US; 0 if otherwise). In models stratified by race, *skin color* (1 if one’s skin is assessed as “black,” 2 if “dark brown,” 3 if “medium brown,” 4 if “light brown,” and 5 if “white”) is also included as a control.² Note that individuals still attending school at W4 are excluded from the sample.³

Analysis

If, net of controls, physical attractiveness is associated with income, a model of income that includes a parameter for physical attractiveness should better fit the data than a model that does not. To assess whether this is the case for our data, we compare: 1) the Akaike’s Information Criterion (AIC)⁴ of a model that regresses income on the set of controls listed above with 2) the AIC of a model that regresses income on the same controls, as well as physical attractiveness. If the latter model fits the data better (as indicated by a lower AIC score), we will have evidence that physical attractiveness is relevant in predicting income. We make this comparison both in a model of the full sample, and models of race-by-gender subsets of the sample.

²Skin color is not included as a predictor in pooled models given the racialized nature of Add Health’s skin color measure.

³Note that all ordinal variables (e.g., *W4 education*) are treated as numerical in this analysis. Sensitivity analyses show that our conclusions change little when these variables are treated as categorical measures.

⁴AIC is a (relative) goodness-of-fit measure, which penalizes a model’s fit (as measured by its likelihood) according to the number of parameters used to fit said model (Long and Freese 2001).

To fit the models needed for this analysis, we use a Gamma generalized linear model (GLM) with a log link-function. We choose this particular model given that our response is continuous, but non-normal (in that it is always positive), and right-skewed (Faraway 2016). Note that choosing a log-link function means that the exponentiated coefficients produced by our models can be interpreted as multiplicative effects.

Preliminary Results

Table 1 provides the estimated coefficients from the Gamma GLM fits of the full sample:

Table 1: Gamma GLM models of full sample

Term	Model 1			Model 2			
	Estimate	Std. Error	t-value	Estimate	Std. Error	t-value	exp(Est)
Intercept	9.01	0.175	51.7	8.99	.173	52.1	(-)
Age	0.034	0.006	5.83	0.034	0.006	5.95	1.03
US Born (1 = yes)	-0.006	0.041	-0.161	-0.010	0.038	-0.270	0.99
Race:							
White (ref.)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Black	-0.138	0.031	-4.55	-0.137	0.030	-4.54	0.87
Hispanic	0.069	0.030	2.26	0.060	0.030	2.018	1.06
Sex (1 = male)	-0.340	0.023	-14.9	-0.352	0.023	-15.5	0.703
Education	0.076	0.006	12.8	0.074	0.006	12.5	1.07
Parent Education	0.032	0.007	4.90	0.031	0.006	4.68	1.03
Occupation (1 = pro/manage)	0.179	0.017	10.25	0.177	0.018	10.0	1.19
Married (1 = yes)	0.103	0.019	5.33	0.098	0.019	5.04	1.10
Attractive (1 = yes)	(-)	(-)	(-)	0.099	0.019	5.28	1.10
AIC		2709				2692	

Our results suggest that attractiveness is a salient predictor of one’s income: as indicated by its lower AIC, a model of income that includes a parameter for physical attractiveness (i.e., Model 2) produces a better fit of the data than a model that does not allow for income to depend on attractiveness (i.e., Model 1).

To better understand physical attractiveness’ *substantive* association with income, we exponentiate the coefficients of Model 2, and examine the multiplicative effects of its predictors. As shown in Ta-

ble 1, Model 2 suggest that the average personal income of attractive respondents is approximately 1.10 times larger than the average income of unattractive respondents.

The next set of results (depicted in Tables 2-4) are for models of race-by-sex subsets of the data. For the sake of parsimony, we present only the Model 2 parameter estimates, as well as the difference in Model 2 and Model 1 AIC, for each race-by-sex groups examined:

Table 2: Gamma GLM models of income: Whites

Term	Males			Females		
	Estimate	Std. Error	exp(Est)	Estimate	Std. Error	exp(Est)
Intercept	9.15	0.281	(-)	7.89	0.392	(-)
Age	0.031	0.009	1.03	0.038	0.010	1.04
US Born (1 = yes)	0.036	0.069	1.04	0.202	0.148	1.22
Education	0.064	0.011	1.06	0.095	0.011	1.10
Parent Education	0.023	0.012	1.02	0.044	0.011	1.05
Occupation (1 = pro/manage)	0.114	0.038	1.12	0.231	0.036	1.26
Married (1 = yes)	0.191	0.029	1.21	-0.043	0.035	0.958
Skin Color	-0.009	0.044	0.99	0.054	0.043	1.06
Attractive (1 = yes)	0.094	0.028	1.10	0.092	0.033	1.10
AIC _{Model 2} - AIC _{Model 1}		-11.3			-8.77	

Table 3: Gamma GLM models of income: Blacks

Term	Males			Females		
	Estimate	Std. Error	exp(Est)	Estimate	Std. Error	exp(Est)
Intercept	9.42	0.539	(-)	7.99	0.518	(-)
Age	0.028	0.016	1.03	0.040	0.018	1.04
US Born (1 = yes)	-0.345	0.067	0.708	-0.151	0.06	0.860
Education	0.027	0.024	1.03	0.141	0.023	1.15
Parent Education	0.052	0.021	1.05	0.042	0.016	1.04
Occupation (1 = pro/manage)	0.119	0.073	1.13	0.190	0.068	1.21
Married (1 = yes)	0.276	0.057	1.32	-0.084	0.057	0.919
Skin Color	0.004	0.026	1.00	0.029	0.026	1.03
Attractive (1 = yes)	0.094	0.060	1.10	0.166	0.043	1.18
AIC _{Model 2} - AIC _{Model 1}		-0.85			-10.5	

Table 4: Gamma GLM models of income: Hispanics

Term	Males			Females		
	Estimate	Std. Error	exp(Est)	Estimate	Std. Error	exp(Est)
Intercept	8.894	0.452	(-)	9.37	0.601	(-)
Age	0.036	0.018	1.04	0.018	0.020	1.02
US Born (1 = yes)	-0.054	0.069	0.95	0.056	0.058	1.06
Education	0.037	0.018	1.04	0.064	0.018	1.07
Parent Education	0.011	0.016	1.01	0.018	0.022	1.02
Occupation (1 = pro/manage)	0.191	0.062	1.21	0.257	0.049	1.29
Married (1 = yes)	0.239	0.066	1.27	0.001	0.071	1.00
Skin Color	0.067	0.027	1.07	-0.025	0.037	0.98
Attractive (1 = yes)	0.121	0.049	1.13	0.052	0.065	1.05
AIC _{Model 2} - AIC _{Model 1}		-4.14		0.896		

Tables 2-4 show that attractiveness is a salient predictor of income in many of the race-by-gender groups examined: in each group (save for Hispanic females), a model that allows for income to depend on attractiveness returns a smaller AIC than does a model that fails to account for said parameter.

The strength of the association among income and attractiveness is also shown in Tables 2-4. For White males, Whites females, Black males, and Hispanic males, individuals read as attractive are estimated as earning approximately 1.10 times more than individuals not assessed as attractive. The strength of this association differs among Hispanic females and Black females, with Hispanic females assessed as attractive earning only 1.05 times more than their unattractive counterparts, and Black females assessed as attractive earning 1.18 times more than their counterparts.

For additional clarity, we use the model parameters given in Tables 2-4 to calculate the predicted personal income of an individual assessed as attractive, and the predicted personal income of an individual not assessed as attractive (while holding the values of each other variable included in the model constant across counterfactual scenarios). The results of this exercise are plotted in Fig. 1 below, and again demonstrate that the penalty for not being attractive is more severe for Black females, and less severe for Hispanic females, relative to every other race-by-gender group examined.

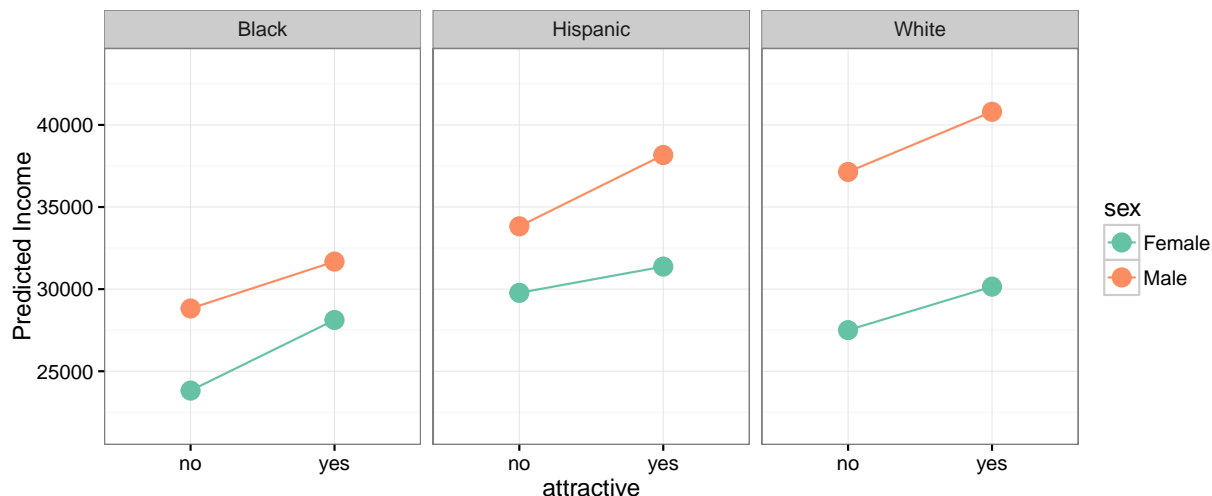


Fig. 1: Predicted income for attractive, and unattractive individuals, stratified by race and gender

Summary and Next Steps

Our preliminary results suggest that not only is physical attractiveness independently associated with income, but also that these associations vary by gender and race (with African-American women experiencing the strongest earnings penalties for not being attractive). In additional analyses, we will examine if these results are robust to additional controls, examine if nonparametric-learning methods reveal that attractive-based non-linearities exists for each race-by-gender group’s model of income, and expand the analysis to include additional racial/ethnic groups (including multiracial populations). We are particularly interested in further articulating the ways in which race/ethnicity, gender and physical attractiveness intersect to produce socioeconomic inequality.

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