

Abolishing the Color Line: W. E. B. Du Bois on Dynamic Social Equilibrium

Brendan Brundage and Guy Numa¹

September 21, 2024

Abstract: This article proposes a quantitative approach to W. E. B. Du Bois’s work that focuses on his conceptualization of the interdependence between the social condition of a marginalized group and public opinion. We argue that Du Bois put forward a dynamic model of social equilibrium that sheds brighter light on the factors that have impacted the advancement of Black Americans. We develop a Du Boisian model that distinguishes between four regimes. A shock to education improves the social condition of the Black community. This will then impact public opinion, which in turn will retroact on social conditions, and the process will continue until a new steady state is reached at a higher value of education. A shock to integration will create a similar process. Du Bois’s framework is then compared with Gunnar Myrdal’s model of dynamic causation. Du Bois should be recognized as a major theorist of social dynamics.

JEL Codes: B31, B41, B55, C61, Z13

1. Introduction

In the seminal *Philadelphia Negro* (henceforth the Philadelphia study), William Edward Burghardt Du Bois demonstrated that white racial prejudice was a major impediment to the socioeconomic advancement of Black Americans. To do so, Du Bois conducted an intragroup and intergroup analysis of racial, occupational, health, income, and wealth disparities involving comparisons across time and space, thereby making him a true pioneer of stratification economics (Numa and Zahran 2024).² Du Bois avoided simplistic explanations, as he emphasized the interdependence of several phenomena particularly the interdependence between the social condition of a marginalized group (Black Americans) and public opinion largely influenced by the dominant group (Whites).³ In accordance with Du Bois’s terminology, the term “social

¹ Brundage is a PhD candidate, and Numa is Associate Professor of Economics, both in the Department of Economics at Colorado State University, Fort Collins, Colorado. Numa is the corresponding author at guy.numa@colostate.edu.

² For an additional reference linking Du Bois to stratification economics, see Stewart 2022.

³ For instance, “public opinion” is used twenty times in the Philadelphia study (Du Bois 1899), while “social condition” appears eight times (in its plural form the term “social conditions” appears five times). In the *Souls of Black Folk* (Du Bois [1903] 2007), “public opinion” is used in nine instances and “social condition” in five instances.

condition” broadly refers to the socioeconomic status whereas “public opinion” (“social environment”) designates the prevalent views, attitudes, and beliefs held by members of the group.

The relationship between social condition and public opinion is discussed in “The Future of the Negro Race in America,” an essay published in January 1904 in the British journal *The East and West*. At that time, Du Bois was professor of Economics and History at Atlanta University (now Clark Atlanta University) and architect of the Atlanta University Studies and editor of their annual *Publications*. A firm believer in the capacity to solve the “Negro problem” with scientific research, Du Bois tried to establish scholarly exchange with several economists affiliated with the American Economic Association (AEA), and eventually became a member of the organization in 1903 at the invitation of Walter Francis Willcox (Du Bois 1903; Willcox 1903).⁴

The purpose of this article is to analyze an overlooked part of Du Bois’s work particularly salient in his 1904 essay. We argue that Du Bois put forward a dynamic model of social equilibrium that throws revealing light on the factors that have impacted the advancement of Black Americans. Du Bois insisted on the “great and important truth in the often-spoken-of interdependence of condition and environment in the rise of a social group” (Du Bois 1904a: 17). He applied the concept of equilibrium to social phenomena, which was more than a loose metaphor. A stable equilibrium, Du Bois explained, is a state where “public opinion becomes fixed and immovable, and social condition merely holds its own” (Du Bois 1904a: 17). In Du Bois’s framework, a stable equilibrium entails that social condition and public opinion are not necessarily aligned or equally weighted and need not produce any positive good; in other words,

⁴ Willcox was an economics professor at Cornell University and served as Chief Statistician of the United States Census Bureau. He would become president of both the AEA and the American Statistical Association. On the relationship between Du Bois and Willcox, see Aldrich 1979, Darity 1994, Wilson 2006, Oliver 2014, and Rutherford 2024.

a stable equilibrium can be inimical to social progress. Overall, Du Bois proposed a functional paradigm that describes how society is subjected to both motion and status quo in a historical setting involving a dominant and a marginalized racial group. His 1904 essay is one of the earliest discussions of social equilibrium. Our study confirms that Du Bois should be recognized as a major theorist of social dynamics (Stewart 1996).

This article contributes to the literature on black political economy particularly the theoretical political economy of race. It also contributes to the budding literature that highlights the quantitative aspects of Du Bois's scholarship (Wilson 2014; Conwell and Loughran 2023). We revisit Du Bois's thinking by means of rational reconstructions (Blaug 2001: 150–51). Drawing upon modern economic analysis, we formalize key ideas that Du Bois expressed in textual form. To our knowledge, this is the first attempt of its kind. We develop a Du Boisian model that distinguishes between four regimes (Virtuous, Racist, Degenerative, and Incompatible). A shock to education improves the social condition of Black Americans. This will then impact public opinion, which in turn will retroact on social conditions, and the process will continue until a new steady state is reached at a higher value of education. A shock to integration will create a similar process. Our methodology helps clarify Du Bois's thinking and underlines the relevance of his work.

We first analyze Du Bois's 1904 essay: we briefly review the ideas of some of the earliest authors who contributed to the concept of social equilibrium, we identify Du Bois's targets and discuss his main arguments, thus setting the stage for our model. Du Bois's framework is then compared with Gunnar Myrdal's model of dynamic causation presented in his magnum opus *An American Dilemma*. The last section concludes.

2. “The Future of the Negro Race in America”

After a brief discussion of the leading authors who predated and followed Du Bois on social equilibrium, this section identifies Du Bois’s targets and analyzes the main arguments developed in his essay. Du Bois’s views are then formalized through a simple model.

2.1. On Social Equilibrium

Equilibrium has often been used by social scientists in a loose metaphorical sense. The term denotes various meanings and concepts. The concept of social equilibrium is no exception. Reviewing all the contributions on social equilibrium is beyond the scope of this article. Nonetheless, some authors have been singularly influential in the development of the concept in the prewar literature. It is noteworthy that notwithstanding their differences, social equilibrium theorists combined dynamics and statics, as they were influenced by biological or physical origins of equilibrium or some mixture of both.

Two authors who predated Du Bois are generally credited with theorizing the concept of social equilibrium: Auguste Comte and Herbert Spencer (Vance 1945). Drawing upon biology and physics, Comte ([1830–42] 1853, [1851–54] 1875–77) and Spencer (1851, 1862) believed that social phenomena were subjected to invariable laws. They approached society as a changing organism, and both envisioned a notion of moving social equilibrium albeit for different reasons (for Spencer a moving equilibrium was only transitory). Nonetheless, they both maintained that a moving social equilibrium was a positive good (Russett 1966). Du Bois was familiar with the writings of Comte and Spencer. He criticized them in various texts, particularly Spencer (Du Bois 1905, 1968).

Du Bois's essay predated Vilfredo Pareto ([1916] 1935) and Talcott Parsons (1937, 1951), two authors who are also associated with the concept of social equilibrium. Pareto is regarded as the first social scientist who applied equilibrium to analyze social questions in a systematic fashion. Irrespective of the divergences between authors, two major questions seem to be addressed: whether a social equilibrium resulted in a Pareto improvement, and the role of statics within a dynamic framework. Russett (1966: 42) summarizes the latter point by noting that "belief in equilibrium is a two-sided coin: one can stress either the elements of conservation or the elements of change."

Du Bois first employed the term "social equilibrium" in "The Conservation of Races" ([1897] 1996: 46–47) where he suggested that in lieu of "social equality between these races," he would favor "a social equilibrium [that] would, throughout all the complicated relations of life, give due and just consideration to culture, ability, and moral worth, whether they be found under white or black skins." For him, this was a second best, a form of "practical policy." This suggests that Du Bois dissociated equality and social equilibrium (Marable 1986: 37). Du Bois (1920:168) later talked about "the great pendulum of social equilibrium" in *Darkwater*, but he truly fleshed out his paradigm in his 1904 essay. Du Bois strongly believed in the dynamic nature of social equilibrium. Several years later, Du Bois expounded on his vision of social dynamics in a coauthored review essay of the multi-volume history of civilizations published by sociologist Pitrim Sorokin. It is argued that "the word 'dynamics' is in its very essence concerned with the causes of change ... not merely with change in itself. ... It is not contended ... that a theory of dynamics should contain no statics" (Coulborn and Du Bois 1942: 506–07). This approach to social change is in line with the model laid out by Du Bois in his 1904 essay. As discussed below, Du Bois envisioned a framework wherein all the variables can potentially move. However, his

model allows some elements of statics and frictions—particularly racial frictions (Du Bois [1897] 1996, 1908)—to account for historical and institutional constraints.

2.2 *Du Bois's Targets*

We shall start by discussing the intellectual landscape that motivated the publication of Du Bois's essay. It allows to better identify his targets. Du Bois challenged racist and pseudoscientific speculations about Black people.

In the last two decades of the nineteenth century, so-called American progressive intellectuals revolutionized higher education by establishing economics as a scientific discipline taught in universities and practiced by experts. Like Du Bois many of these experts received their graduate training in Germany and imbibed the principles of the German Historical School of Economics. They quickly took leadership positions in the newly created AEA. Unfortunately, this movement of professionalization of American economics had a dark side. In *Illiberal Reformers*, Thomas C. Leonard chronicles how these “progressive” economists were at the center of a paradox: one the one hand, they promoted labor legislation that regulated “workmen’s compensation, banned child labor, compelled schooling of children, inspected factories, fixed minimum wages and maximum hours, paid pensions to single mothers with dependent children, and much more.” On the other hand, they actively campaigned “to exclude the disabled, immigrants, African Americans, and women from the American work force, all in the name of progress” (Leonard 2016: x–xi). Indeed, these so-called progressive economists routinely provided staunch intellectual support to biological and cultural determinist views that promoted the racial inferiority of Black people (Aldrich 1979; Darity 1994; Prasch 2004). Some of their writings appeared in the *AEA Publications* series (precursor to the *American Economic Review*) and the

Quarterly Journal of Economics, two of the earliest academic outlets in the American economics profession. Take, as a representative example of the thinking of this period, the following passage from Columbia University economist and vice-president of the American Statistical Association Richmond Mayo-Smith:

The negroes are by birth and race and previous condition of servitude incapable of representing the full American capacity for political and social life. They have neither the traditions of political life nor practical experience in self-government. The presence of this numerous body of people, who will never fully amalgamate with the white population, will always be a problem for us. The tendency will be for them to remain in a position of inferiority, unable fully to meet the demands on their intelligence and virtue which our system of political liberty and equality makes. (Mayo-Smith 1890: 64–65; cited by Prasch 2004: 150)

Leonard (2016: xiii) concedes that “[T]he progressives were not the only Progressive Era intellectuals to traffic in reprehensible ideas. Conservatives and socialists also drank deeply from the seemingly bottomless American wells of racism, sexism, and nativism, and they, too, borrowed evolutionary and eugenic ideas in support of their politics. But the progressives ... prevailed. It was the progressives who fashioned the new sciences of society, founded the modern American university, invented the think tank, and created the American administrative state, institutions still at the center of American public life and still defined by the progressive values that formed and instructed them.”

The “progressives” were strong proponents of the “Black Disappearance Hypothesis” (Darity 1994). Black Americans were supposedly condemned to early extinction. Such views inspired by Darwinism and eugenics were advanced by statistician and insurance company executive Frederick L. Hoffman (1896) and Joseph A. Tillinghast (1902), among other proponents.⁵ Du

⁵ The son of a Southern slaveholder, Tillinghast was a former student of Willcox at Cornell University. Published with a preface by Willcox, his essay earned him the strong backing of the AEA (Rutherford 2024: 6). His essay

Bois tried to convince Willcox and his so-called progressive colleagues that the primary obstacle to the betterment of Black people was not their alleged biological inferiority or inherent character defects or even their lack of efficiency but pervasive racial discrimination, a concrete phenomenon that was part of the social environment that Black Americans faced in their daily life. He sought to identify the causes and effects of racial discrimination.

In line with the inductive methodology of Gustav Schmoller, his mentor at the University of Berlin and leader of the “younger” German Historical School of Economics, Du Bois (1968: 206) thus proceeded “to study the facts, any and all facts, concerning the American Negro and his plight, and by measurement and comparison and research, work up to any valid generalization.” Du Bois essentially put “facts before theory” (Lewis 1993: 202). Thus, the Philadelphia study was an empirically grounded study that combined race and class analysis of urban America, the first conducted by a social scientist. The study contains theoretical inferences albeit scattered, but full-fledged theorizing occurred in the years that followed its publication. Du Bois was still producing empirical research through the *Atlanta University Publications* (1898–1914); however, these studies were modeled after the Philadelphia study, although they suffered from limited financial support. His 1904 essay therefore marks a major step in the framing of a coherent theoretical framework, one that is rooted in empirical evidence and lived experience. Reflecting on this period of his life in his *Autobiography*, Du Bois recounted that the premise of his general theory of society was “the idea of a changing developing society rather than a fixed social structure” (Du Bois 1968: 206). This idea of dynamic social change also transpires in “The Development of a People,” another essay published that same year (Du Bois 1904b).

contains repugnant narratives about Black people that went beyond those expressed by Hoffman and Mayo-Smith. Tillinghast drew upon ethnological reports from various European and American travelers to Africa to argue that Black people were an inferior race of “indolent savages” that endangered America (Tillinghast 1902: 575). For him, Black people were better off under slavery.

2.3. The Main Arguments

In the “The Future of the Negro Race in America,” Du Bois identified four possible outcomes for Black Americans: perpetual serfdom, extinction, migration to a foreign country, and full citizenship. He vigorously pleaded for the latter, scolding racial segregation and violence toward Black Americans, and now called for “full and fair” equality (Du Bois 1904a: 16). Several arguments are reminiscent of those advanced in the Philadelphia study. Throughout the United States, Du Bois (1904a: 5) deplored, “the colour line is so drawn as to increase competition against the Negro, restrict his chances of employment, and lower his labour price, and while agencies for his degradation welcome and invite him, those for his uplifting are closed or coldly tolerant. ... The fear of political consequences or of labour strikes never deters an employer from discharging his Negro hands or reducing their wages, while that same fear may keep out Negro labourers or lead to the substitution of whites even at an economic disadvantage.”⁶ Du Bois (1904a: 6–7) added that “the whole social atmosphere” and “the intangible and powerful spiritual environment of the race” fostered “either a false humility or hypocrisy, or an unreasoning radicalism and despair. ... It is ... difficult to see how under the long continuance of the present system anything but degeneration into hopelessness, immorality, and crime could ensue.” In other words, the situation was critical, and something had to change.

Du Bois’s essay provided him with the opportunity to criticize the ideas defended by the proponents of the “Black Disappearance Hypothesis.” Du Bois’s two-pronged argument was articulated as follows: “In any social group, however prosperous, degenerative tendencies may

⁶ The term “Negro” is not capitalized in the original text, which was customary of texts published in Europe at that time. We followed Du Bois’s practice of capitalizing the word, for he believed that “eight million Americans are entitled to a capital letter” (Du Bois 1899: 1n1).

always be disclosed. The situation becomes critical and fatal when such tendencies are more manifest than those of upbuilding and progress.” The extinction of Black Americans as a race—if it were to happen—would be caused by a *deliberate* policy of exclusion and disenfranchisement: “the reduction of a mass of men to permanent or long-continued economic and political inferiority means the deliberate reduction of their chances of survival, and the deliberate encouragement of degeneration among them” (Du Bois 1904a: 7).

The next step for Du Bois was to examine the conditions that could lead to “the abolition of the colour line” (Du Bois 1904a: 16). His text masterfully delineates a dynamic model of social equilibrium that shed brighter light on the factors that have impacted the advancement of Black Americans as a racial group. Using a mathematical analogy, Du Bois distinguished between dependent and independent social variables, which he considered “social quantities.” To our knowledge, the significance of this passage of the text has been overlooked by previous commentators. The reasoning is the following:

Can American Negroes hope to attain [the abolition of the colour line]? The answer to this is by no means simple. To use mathematical terms, the problem is a dynamic one, with two dependent and two independent variables. Let us consider first the dependent variables: they are the social condition of the Negro on the one hand, and public opinion or social environment on the other. These are dependent variables in the sense that, as the social condition of the Negro improves, public opinion toward him is more tolerant, and, vice versa, as public opinion is more sympathetic, it is easier for him to improve his social condition. . . . thinkers unacquainted with the problem often see here an easy solution. One says: “Let the Negroes improve in morality, gain wealth and education, and the battle is won.” The other says: “Let public opinion change toward the Negro, give him work and encouragement, treat him fairly and justly, and he will rapidly rise in the world.” Here now are two propositions which contain a subtle logical contradiction, and yet practically all the solutions of the Negro problem outside the radical ones I have mentioned have been based on the emphasis of one of these propositions. (Du Bois 1904a: 16)

In general, Du Bois noted, social condition and public opinion are interdependent and positively related. If one improves, so does the other. However, there is no guarantee that both phenomena occur at the same time. While both variables can move, they do not move at the same time or the same pace. The dynamic nature of the problem can create a lag between the two variables: “social condition may greatly improve before public opinion realises it. Public opinion may grow liberal before men are aware of the new chances opening” (Du Bois 1904a: 17). For Du Bois, a social equilibrium does not necessarily entail equality of conditions between Blacks and Whites, which is consistent with the view exposed in the “Conservation of Races.” Black people can indeed be worse off. This is exactly what Du Bois denounced in his essay. In other words, a social equilibrium may not be *collectively* optimal. Moreover, the equilibrium can persist, that is, it can be stable:

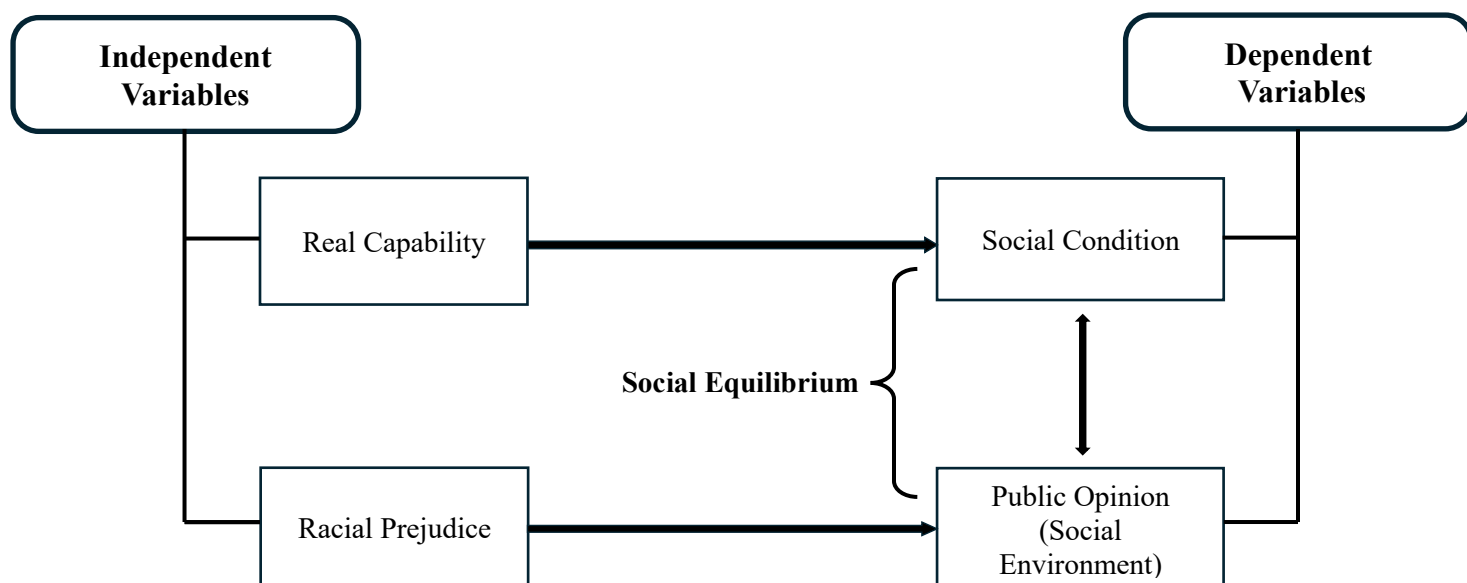
[T]he continual tendency in such dynamic problems is to a stable equilibrium—where public opinion becomes fixed and immovable, and social condition merely holds its own. That has been the continual tendency with the Negro problem; for a few brief years after the war a whirling revolution of public opinion was accompanied by a phenomenal rush and striving upward. Then the public conscience grew cold, the cement of the new nation hardened, and while in a few brief years we had turned slaves into serfs, we left them merely serfs, nothing more (Du Bois 1904a: 17).

In a nutshell, a stable social equilibrium is detrimental to social progress. Du Bois added another qualification to the general hypothesis of positive relationship between social condition and public opinion. The two variables can vary inversely to each other: “an improving people, sometimes far from reaping approbation, reap additional hate and difficulty, and increasing liberality in the national conscience is sometimes repaid by degradation and degeneration” (Du

Bois 1904a: 17). Du Bois put the final touch to his model by introducing two independent variables, namely “the real capability of the Negro race” and “the deeper problem of innate racial prejudice.” The model is represented in Figure 1.

Figure 1

Du Bois’s Dynamic Model of Social Equilibrium



2.4. The Formalized Model

First, we begin by specifying household decision making of Black Americans. The economy produces two goods for consumption: a private good, x , with price p and a numeraire public good, c . The distinction between private and public goods is based on Paul Samuelson’s theory of public expenditure (1954). An individual’s consumption of the public good does not harm the ability for others to consume, that is, it is non-excludable and non-rival. The private good follows traditional laws of consumption (excludable and rival).

However, in this model we introduce an additional cost to the public good for the Black American community, z . This cost signifies the differential access to the public good between White and Black Americans throughout history. The differential access is an example of the Du Boisian concept of “psychological wages,” where white Americans enjoy improved access to parks and schools and better treatment from police and judges (Du Bois 1935: 700–01). We define z as public opinion (social environment of Black Americans), which is one of the two dependent variables mentioned by Du Bois (1904a). Access to the public good increases as public opinion improves. Consumers in the Black community have identical Cobb-Douglas preferences over the two goods at time t . Households maximize based on the following utility, $U(x_t, c_t)$, and income constraint, I :

$$\begin{aligned} \max_{\{x_t, c_t\}} U(x_t, c_t) &= x_t^\alpha c_t^{(1-\alpha)}, \alpha \in (0,1) \\ \text{s. t. } I_t &= p_t x_t + \frac{c_t}{z_t} \end{aligned}$$

Solving the maximization problem yields consumer demands of $x_t = \alpha I_t / p_t$ and $c_t = (1 - \alpha) I_t z_t$. We then use the demand equations to solve for indirect utility, $V(p_t, I_t, z_t)$:

$$V(p_t, I_t, z_t) = \frac{\theta I_t z_t^{(1-\alpha)}}{p_t^\alpha} \quad (1)$$

$\theta = \alpha^\alpha (1 - \alpha)^{(1-\alpha)}$. Next, we define incomes as increasing at a decreasing rate of social condition, $I_t = y_t^\beta$. Clearly, defining incomes according to marginal productivities is not applicable in this environment of racial differentials. Our purpose is a Du Boisian model that outlines the unequal treatment of Black Americans. The social condition of the Black community, y_t , is the second dependent variable outlined by Du Bois (1904a). Holding θ and

prices constant and differentiating Equation (1) while replacing incomes with social condition gives:

$$\frac{\dot{V}_t}{V_t} = \beta \frac{\dot{y}_t}{y_t} + (1 - \alpha) \frac{\dot{z}_t}{z_t} \quad (2)$$

Where $\beta < 1$. The utility of Black Americans improves as social condition and public opinion increase. Next, we use the formulation of Du Bois (1904a) to define the dynamics of the dependent variables: Social condition, y , and public opinion, z :

$$\frac{\dot{y}_t}{y_t} = a - y_t + \phi z_t \quad (3)$$

$$\frac{\dot{z}_t}{z_t} = b - z_t + \eta y_t \quad (4)$$

Equation (3), is the growth rate of the social condition of Black Americans. It is determined by education a , current level of social condition y , and current level of public opinion z . ϕ is the first independent variable mentioned by Du Bois that refers to the “real capability of the negro race” (Du Bois 1904a: 18). It determines the response of social condition due to a change in public opinion and takes a value between -1 and 1. If $\phi < 0$, then social conditions deteriorate as public opinion improves. This captures Du Bois’s point about the possibility of “increasing liberality in the national conscience is sometimes repaid by degradation and degeneration” (Du Bois 1904a: 18). If $\phi > 0$, then social condition moves with public opinion, and if $\phi = 0$, then there is no relationship.

Equation (4) is the growth rate of public opinion. It is determined by integration b , the current level of public opinion z_t , and the current level of social condition y_t . η is the second independent variable mentioned by Du Bois and refers to “innate racial prejudice” (1904a: 18).

It determines the response of public opinion due to a change in social condition and takes a value between -1 and 1. The smaller the value of η means the greater racial prejudice. For example, if $\eta < 0$, then public opinion about the Black community deteriorates due to an increase in social condition and vice-a-versa if $\eta > 0$. If $\eta = 0$, then there is no relationship.

The next step is to find the steady states of social condition and public opinion by setting the dynamic equations equal to 0, which are found below in Equations (5, 6). Though not shown, the steady states are asymptotically stable because the Jacobian of our dynamic system has a negative trace, positive determinant, and two negative real roots. This holds as long as η and ϕ have an absolute value less than 1, which we already assumed. We also assume that $\eta < b/a$ and $\phi < a/b$ so that the steady states are always positive.

$$y_{ss} = \frac{a + b\phi}{1 - \eta\phi} \quad (5)$$

$$z_{ss} = \frac{b + a\eta}{1 - \eta\phi} \quad (6)$$

The process works as follows: There are four regimes according to the values of η and ϕ that produce a stable social equilibrium. In each regime, η and ϕ are held constant. In the Virtuous regime: η and ϕ are positive. Racist regime: $\eta < 0, \phi > 0$. Degenerative regime: $\eta > 0, \phi < 0$. Incompatible regime $\eta < 0, \phi < 0$. In each regime, we compare steady-state values and shocks to education a and integration b . A shock to education, a , improves the social condition of Black Americans according to Equation (3) as the system moves toward a new steady state. This will then impact public opinion in a direction dependent on racial prejudice, η , according to Equation (4), which in turn will retroact on social conditions, and the process will continue until a new steady state is reached at a higher value of education, Equations (5, 6). A shock to integration, b , will create a similar process. Public opinion will rise,

and will affect social conditions according to the sign and magnitude of the capability of Black Americans, ϕ . As a result, public opinion will adjust and the process continues until a new steady state is reached at a higher value of integration, Equations (5, 6).

Figure (1) outlines the phase diagrams of the four regimes. The difference between each regime is the combination of the slopes of the public opinion and social condition nullclines. The Virtuous regime is in Panel (a). Both slopes are positive, therefore social condition and public opinion move with each other. Panel (b) is the Racist regime, where the slope of public opinion is negative. This means that Black Americans are subject to extreme racism from their fellow citizens so that an improvement in their social condition worsens public opinion.

The Degenerative regime is in Panel (c). In this regime, Black Americans take advantage of a less racist environment by not seeking to improve themselves. Du Bois mentions this as a possible consequence of years in servitude. Under this regime, social condition deteriorates as public opinion improves. Finally, the Incompatible regime is in Panel (d), where both nullcline slopes are negative. Public opinion is extremely racist and Black Americans do not respond positively to any improvement in this opinion.

We compare each respective regime's steady-state utility for Black Americans in Column 3 of Table (1) using Equation (1). To do so, we use hypothetical numbers: $\alpha, \beta, a, b = .5, p = 1$, and $|\eta|, |\phi| = .5$, where the sign depends on the regime. The Virtuous regime has the highest steady-state utility, while the incompatible regime has the lowest. A stable social equilibrium can have varying levels of utility for Black Americans.

Figure 1: Regimes

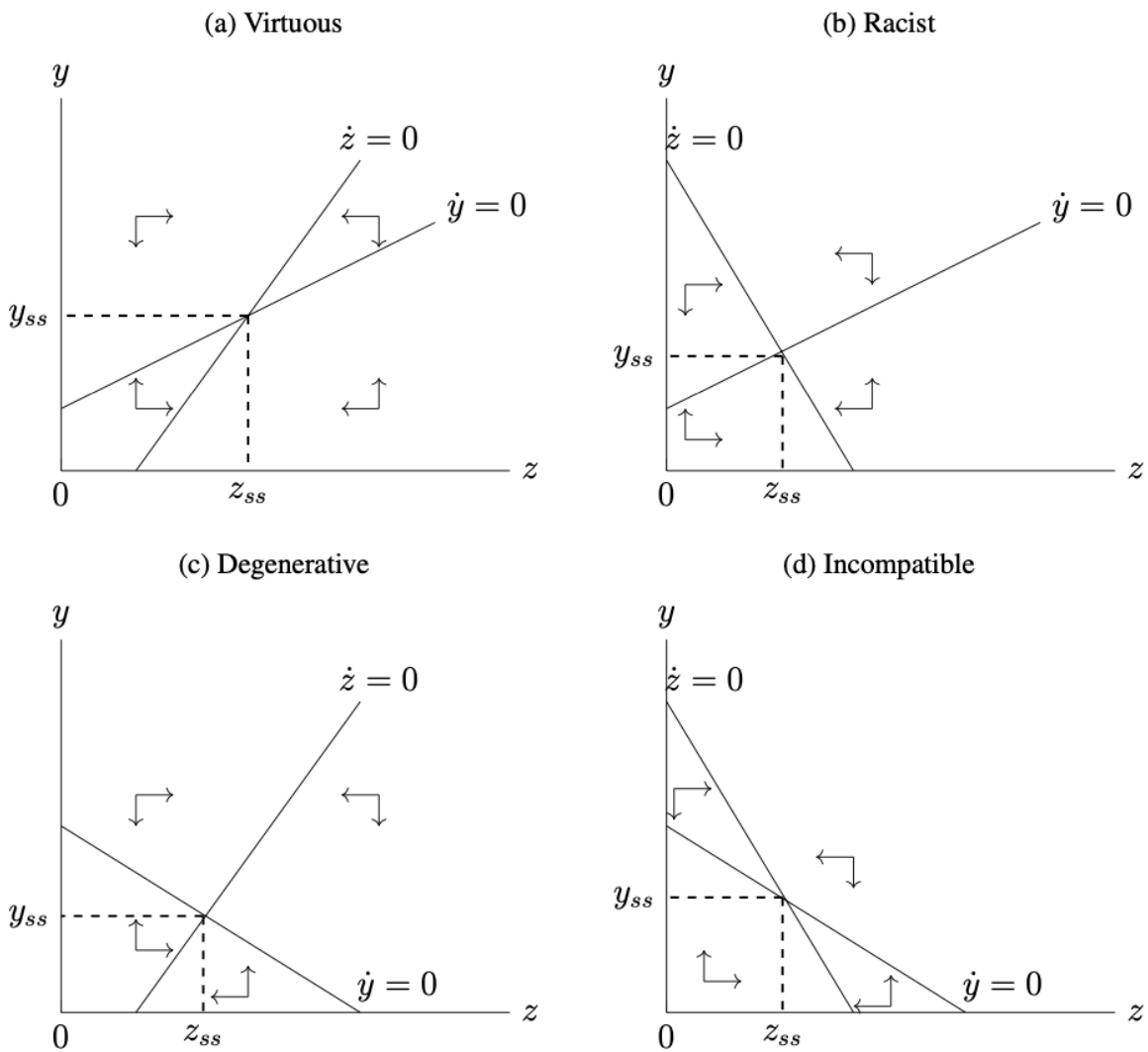


Table 1: Regime comparisons

Regime	Signs	Steady state (with hypothetical numbers)	$\uparrow a$	$\uparrow b$
I. Virtuous Regime	$\eta > 0, \phi > 0$	$y_{SS} = 1.0, z_{SS} = 1.0,$ $V_{SS} = 0.5$	$\uparrow y_{SS}, \uparrow z_{SS}$	$\uparrow y_{SS}, \uparrow z_{SS}$
II. Racist Regime	$\eta < 0, \phi > 0$	$y_{SS} = 0.6, z_{SS} = 0.2,$ $V_{SS} = 0.173$	$\uparrow y_{SS}, \downarrow z_{SS}$	$\uparrow y_{SS}, \uparrow z_{SS}$
III. Degenerative Regime	$\eta > 0, \phi < 0$	$y_{SS} = 0.2, z_{SS} = 0.6,$ $V_{SS} = 0.173$	$\uparrow y_{SS}, \uparrow z_{SS}$	$\downarrow y_{SS}, \uparrow z_{SS}$
IV. Incompatible Regime	$\eta < 0, \phi < 0$	$y_{SS} = 0.3, z_{SS} = 0.3,$ $V_{SS} = 0.157$	$\uparrow y_{SS}, \downarrow z_{SS}$	$\downarrow y_{SS}, \uparrow z_{SS}$

Finally, we compare shocks to education, a , and integration, b , on utility in Columns 4 and 5 using Equation 2. A shock to education moves the social condition nullcline to the right, and therefore, always increases the steady-state value of social conditions. However, in the Racist and Incompatible regime's public opinion decreases from this shock because of the sign of η . An increase to integration moves the public opinion nullcline to the right, so the steady-state values of public opinion are always improved. In the Degenerative and Incompatible regimes, social

condition falls in response to an improvement in integration. In total, utility always improves from a shock to education or integration according to Equation 2. Nonetheless, the increase in utility is largest in the Virtuous regime and smallest in the Incompatible regime.

The importance of this exercise, and of Du Bois's argument, is to show that the issue of race in the United States is "a matter of peculiar subtlety and complexity" (Du Bois 1904a: 17). In our model, a stable social equilibrium where Black Americans maintain an inferior position is possible. Preventing this requires all Americans, regardless of race, to take necessary steps to improve the condition of the Black community. For this to occur, racist behaviors must be eliminated, and Black Americans must believe in themselves.

3. An American Dilemma

The model outlined by Du Bois shares some similarities with the model of dynamic causation put forward by Swedish economist Gunnar Myrdal in *An American Dilemma*. This is not surprising considering the significant influence that Du Bois's thinking exerted on Myrdal's work. However, the differences between their respective worldviews should not be overlooked.

Until the 1950s studies on discrimination and race relations were understood to be outside the realm of economics. There were a few exceptions, however. One notable exception could be found in the work of Myrdal, described by David W. Southern (1987: xvi) as the "Keynes of American race relations." In 1974, the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel was awarded to Myrdal "for [his] penetrating analysis of the interdependence of economic, social and institutional phenomena," a testament of the impact of Myrdal's work. Thomas D. Boston (1991: 305) notes that "if an economist is asked to identify the definitive study of black life, he will inevitably answer Gunnar Myrdal's *American Dilemma*," in reference to Myrdal's

book published in 1944. A lengthy tome of more than fifteen hundred pages, the book dealt with race relations in the United States, contributing to influence government studies and Supreme Court cases (Southern 1987). The title of Myrdal's book referred to the hypocrisy of white Americans who believed in liberal democratic ideals (the "American Creed") but treated Black Americans unfairly and undemocratically.

In chapter 3 and Appendix 3, Myrdal (1944: 1069) introduces a "theoretical model of dynamic social causation." Inspired by Edwin R. Embree (1931: 200) and Knut Wicksell's cumulative causation applied to monetary theory (Myrdal 1939a), Myrdal (1944: 1066) describes the "principle of causation" or "vicious circle" as follows:

If ... for some reason or other, the Negro plane of living should be lowered, this will—other things being equal—in its turn increase white prejudice. Such an increase in white prejudice has the effect of pressing down still further the Negro plane of living, which again will increase prejudice, and so on, by way of mutual interaction between the two variables, *ad infinitum*. A cumulative process is thus set in motion which can have final effects quite out of proportion to the magnitude of the original push. The push might even be withdrawn after a time, and still a permanent change will remain or even the process of change will continue without a new balance in sight. (See also Myrdal 1944: 75–76)

In this scenario, discrimination against Black Americans intensifies and the "vicious circle" spirals downward.⁷ Myrdal's scheme resonates strongly with Du Bois's model. Note, however, that unlike Du Bois Myrdal (1944: 76, 1065, 1067) quickly discarded the hypothesis of stable equilibrium which he viewed as unrealistic. He instead emphasized a process of dynamic cumulative causation in one direction or the other.

⁷ Myrdal (1944: 75–76) notes that the process works both ways, that is, in an "upward" desirable direction as well as in a 'downward' undesirable direction" (see also Myrdal 1944: 1066, 1069nb). Also note that Myrdal (1944: 1068) acknowledges that improvement in black social conditions can lead to *greater* white prejudice.

Myrdal's thinking was greatly influenced by Du Bois's views. Myrdal corresponded with Du Bois and twice visited him (Myrdal 1938; Du Bois 1939). Moreover, Du Bois is cited and quoted numerous times in *American Dilemma*, with several references to the Philadelphia study.⁸ For instance, Myrdal (1944: 96) writes: "[Black] writings from around the turn of the century ... sound so much more modern than white writings. ... Du Bois' study of the Philadelphia Negro community ... stands out even today as a most valuable contribution." Myrdal (1944: 1132) adds: "We cannot close this description of what a study of a Negro community should be without calling attention to the study which best meets our requirements, a study which is now all but forgotten. We refer to W. E. B. Du Bois, *The Philadelphia Negro*, published in 1899." Like Du Bois, Myrdal insists on the multiple facets of the "Negro problem" and the fundamental problem caused by white racial prejudice toward Black people: "there is really a common tie and ... a unity in all the special angles of the Negro problem. All these specific problems are only outcroppings of one fundamental complex of human valuations—that of American caste. This fundamental complex derives its emotional charge from the equally common race prejudice, from its manifestations in a general tendency toward discrimination, and from its political potentialities through its very inconsistency with the American Creed." Therefore, "we shall assume a general interdependence between all the factors in the Negro problem" (Myrdal 1944, 75). The assumption echoes Du Bois's own hypothesis of interdependence between social condition of Black Americans and public opinion. The latter is discussed extensively in Myrdal's book, and quite often in Du Boisian terms (for instance, see Myrdal 1944, 1032–33). Furthermore, Part 4 and Part 8 of the book analyze economic and social stratification in Du Boisian fashion. Du Bois (1944: 124) reviewed and praised Myrdal's book as a "monumental and unrivalled study." Nevertheless, the genesis of Myrdal's book speaks

⁸ According to Morris (2015: 216), Du Bois is cited eighty-three times in *American Dilemma*.

volumes about the ostracism Du Bois had to face. In *The Scholar Denied*, Aldon D. Morris recounts how the funding and publication of Myrdal's groundbreaking study contributed to the marginalization of Du Bois's scholarship. Because of fears from white scholars, Du Bois decades-long push to publish an *Encyclopedia of the Negro* never came to fruition. Instead, the Carnegie Foundation preferred to support the work of a white European social scientist because his work was perceived to be more objective and scientific. Yet in more than one instance Myrdal solicited feedback from Du Bois on his research plans and preliminary findings (Du Bois 1939; Myrdal 1939b). According to Ira de Augustine Reid (1939), Myrdal even wanted Du Bois to participate in his study.

However, one should be cautious not to overstate the similarities between Du Bois's and Myrdal's worldviews. Morris (2015: 209–15) argues that despite noble intentions, Myrdal's study was marred by a "pro-Western white bias." Du Bois's and Myrdal's visions are incompatible for two reasons. Myrdal (1944: li–lii) seemed to deny agency to Black Americans. This is antithetical to Du Bois's efforts to underline the crucial efforts of the former slaves in overthrowing slavery during the Civil War, the struggle for equality through the civil rights and Black Power movements, and the overall contributions of Black people to American history and culture (Du Bois [1903] 2007, 1924, 1935). What is more, Myrdal (1944: 928) stated that "American Negro culture is ... a distorted development, or a pathological condition, of the general American culture." As individuals and as a group, Black Americans would be well-advised "to become assimilated into American culture, to acquire the traits held in esteem by the dominant white Americans" (929). To Myrdal's defense, he also claimed that "American culture is 'highest' in the pragmatic sense that adherence to it is practical for any individual or group which is not strong enough to change it."

Moreover, “the observation that peculiarities in the Negro community may be characterized as social pathology” should “not to be taken in a doctrinal sense” (Myrdal 1944: 929).

4. Conclusion

Disenchanted by scientific research and American academia, Du Bois increasingly embraced activism. Moreover, mildly critical of capitalism in his early writings, he increasingly evolved leftward. However, one constant concern remained: his crusade against racial prejudice, which motivated his lifelong battle to abolish the color line in the United States and abroad.

The essay “The Future of the Negro Race in America” demonstrates that Du Bois developed a research program that was theoretically articulated. He is one of the earliest authors who theorized social equilibrium. This undermines the claim that Du Bois failed to develop a systematic theoretical generalization of the facts he recorded and that, for this reason, “Du Bois’s scientific legacy was limited” (Saint-Arnaud 2003: 155–56). Inductive reasoning does not preclude theorization. By prioritizing empirics, Du Bois (1968: 205) wanted to move away from “vague statements,” “vast generalizations,” and “fruitless word-twisting” let alone racist speculations about people of his own group.

Our model is Du Boisian in spirit and results. It captures most of the key insights of his 1904 essay including the interdependence between the social condition of the Black community and public opinion, the cornerstone of Du Bois’s framework. It highlights how society is subjected to both motion and status quo in a historical setting involving a dominant and a marginalized group. This framework takes into account historical and institutional constraints that have affected the socioeconomic advancement of Black Americans.

Our essay has showed that Du Bois was a true political economist, and it also confirms that he was a sharp theorist of social dynamics. Our hope is that this research will incentivize scholars from all horizons to revisit Du Bois’s writings and produce theoretical research from a Du Boisian perspective.

Du Bois ended his text with a candid but optimistic outlook. In the penultimate paragraph of his text he wrote: “All this does not prove that the future is bright and clear, or that there is no question of race antipathy or Negro capacity; but it is distinctly and emphatically hopeful ... it puts the burden of proof rather on those who deny the capabilities of the Negro than on those who assume that they are not essentially different from those of other members of the great human family” (Du Bois 1904a: 19).

References

- Aldrich, Mark. 1979. “Progressive Economists and Scientific Racism: Walter Willcox and Black Americans, 1895-1910.” *Phylon* 40 (1): 1–14.
- Blaug, Mark. 2001. “No History of Ideas, Please, We’re Economists.” *Journal of Economic Perspectives* 15 (1): 145–64.
- Boston, Thomas D. 1991. “W.E.B. Du Bois and the Historical School of Economics.” *American Economic Review* 81 (2): 303–06.
- Comte, Auguste. [1851–54] 1875–77. *System of Positive Polity*. London: Chapman.
- Comte, Auguste. [1830–42] 1853. *The Positive Philosophy of Auguste Comte*. London: J. Chapman.
- Conwell, Jordan A., and Kevin Loughran. 2023. “Quantitative Inquiry in the Early Sociology of W. E. B. Du Bois.” *Du Bois Review* In press. doi:10.1017/S1742058X23000206.

- Coulborn, Rushton, and William Edward Burghardt Du Bois. 1942. "Mr. Sorokin's Systems." *Journal of Modern History*, 14 (4): 500–21.
- Darity, William Alexander, Jr. 1994. "Many Roads to Extinction: Early AEA Economists and the Black Disappearance Hypothesis." *History of Economics Review* 21 (1): 47–64.
- Du Bois, William Edward Burghardt. [1897] 1996. "The Conservation of Races." *American Negro Academy Occasional Papers*, no. 2. Reprinted in *The Oxford W.E.B. Du Bois Reader*, edited by Eric J. Sundquist, 38–47. New York: Oxford University Press.
- Du Bois, William Edward Burghardt. 1899. *The Philadelphia Negro: A Social Study*. Philadelphia: University of Pennsylvania.
- Du Bois, William Edward Burghardt. 1903. Handwritten response to Willcox 1903. *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries.
- Du Bois, William Edward Burghardt. [1903] 2007. *The Souls of Black Folk*. Oxford: Oxford University Press.
- Du Bois, William Edward Burghardt. 1904a. "The Future of the Negro Race in America." *The East and the West* 2 (January): 4–19.
- Du Bois, William Edward Burghardt. 1904b. "The Development of a People." *International Journal of Ethics* 14 (3): 292–311.
- Du Bois, William Edward Burghardt. 1905. "Sociology Hesitant." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries.
- Du Bois, William Edward Burghardt. 1908. "Race Friction Between Black and White." *American Journal of Sociology* 13 (6): 834–38.

- Du Bois, William Edward Burghardt. 1920. *Darkwater: Voices from Within the Veil*. New York: Harcourt, Brace and Howe.
- Du Bois, William Edward Burghardt. 1924. *The Gift of Black Folk: The Negroes in the Making of America*. Boston: Stratford.
- Du Bois, William Edward Burghardt. 1935. *Black Reconstruction: an Essay toward a History of the part which Black Folk Played in the Attempt to Reconstruct Democracy in America, 1860-1880*. New York: Harcourt, Brace.
- Du Bois, William Edward Burghardt. 1939. "Letter from W. E. B. Du Bois to Ira de Augustine Reid, April 14." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries. Reprinted in Du Bois (1976), 187–91.
- Du Bois, William Edward Burghardt. 1968. *The Autobiography of W. E. B. Du Bois: A Soliloquy on Viewing my Life from the Last Decade of its First Century*. New York: International Publishers.
- Embree, Edwin R. 1931. *Brown America: The Story of a New Race*. New York: Viking Press.
- Hoffman, Frederick Ludwig. 1896. "Race Traits and Tendencies of the American Negro." *Publications of the American Economic Association* 11 (1–3): 1–329.
- Leonard, Thomas C. 2016. *Illiberal Reformers: Race, Eugenics, and American Economics in the Progressive Era*. Princeton: Princeton University Press.
- Lewis, David Levering. 1993. *W. E. B. Du Bois: Biography of a Race, 1868–1919*. New York: Henry Holt.
- Marable, Manning. 1986. *W. E. B. Du Bois: Black Radical Democrat*. Boston: Twayne.

- Mayo-Smith, Richmond. 1890. *Emigration and Immigration: A Study in Social Science*. New York: Charles Scribner's Sons.
- Morris, Aldon Douglas. 2015. *The Scholar Denied: W. E. B. du Bois and the Birth of Modern Sociology*. Berkeley: University of California Press.
- Myrdal, Gunnar. 1938. "Letter from Gunnar Myrdal to W. E. B. Du Bois, November 26." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries. Reprinted in Du Bois (1976), 177.
- Myrdal, Gunnar. 1939a. *Monetary Equilibrium*. London: William Hodge.
- Myrdal, Gunnar. 1939b. "Letter from Gunnar Myrdal to W. E. B. Du Bois, May 3." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries.
- Myrdal, Gunnar. 1944. *An American Dilemma: The Negro Problem and Modern Democracy*. New York: Harper & Brothers.
- Numa, Guy, and Sammy Zahran. 2024. "W. E. B. Du Bois and Economics: a Reappraisal." Working paper.
- Oliver, Lawrence J. 2014. "W. E. B. Du Bois and the Dismal Science: Economic Theory and Social Justice." *American Studies* 53 (2): 49–70.
- Pareto, Vilfredo. [1916] 1935. *Trattato di Sociologia Generale*. Translated as *The Mind and Society*. Edited by Arthur Livingston. New York: Harcourt, Brace.
- Parsons, Talcott. 1937. *The Structure of Social Action*. New York: Free Press.
- Parsons, Talcott. 1951. *The Social System*. New York: Free Press.

- Prasch, Robert E. 2004. "One Hundred Years of American Economics on Race and Discrimination." In *Race, Liberalism and Economics*, edited by David Colander, Robert E. Prasch, and Falguni A. Sheth, 145–81. Ann Arbor: University of Michigan Press.
- Reid, Ira de Augustine. 1939. "Letter from Ira de Augustine Reid to W. E. B. Du Bois, February 3." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries.
- Rutherford, Malcolm. 2024. "Racism, Segregation, Acceptance: The American Economics Profession and Black Studies, 1890-2022." Working Paper.
- Saint-Arnaud, Pierre. 2009. *African-American Pioneers of Sociology: A Critical History*. Toronto: University of Toronto Press.
- Samuelson, Paul Anthony. 1954. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics* 36 (4): 387–89.
- Southern, David W. 1987. *Gunnar Myrdal and Black-White Relations: The Use and Abuse of An American Dilemma, 1944–1969*. Baton Rouge: Louisiana State University Press.
- Spencer, Herbert. 1851. *Social Statics: or, The Conditions Essential to Happiness Specified, and the First of them Developed*. London: Chapman.
- Spencer, Herbert. 1862. *First Principles*. London: Williams and Norgate.
- Stewart, James B. 1996. "In Search of a Theory of Human History: W.E.B. Du Bois's Theory of Social and Cultural Dynamics." In *W.E.B. Du Bois on Race and Culture: Philosophy, Politics, and Poetics*, edited by Bernard W. Bell, Emily Grosholz, and James B. Stewart, 261–88. Routledge.
- Stewart, James B. 2022. "Connecting the Threads: Stratification Economics and the Political Economy of W.E.B. Du Bois." *Review of Black Political Economy* 50 (3): 269–90.

- Vance, Rupert B. 1945. "Toward Social Dynamics." *American Sociological Review* 10 (2): 123–31.
- Tillinghast, Joseph Alexander. 1902. "The Negro in Africa and America." *Publications of the American Economic Association* 3 (2): 401–637.
- Willcox, Walter Francis. 1903. "Letter from The American Economic Association to W. E. B. Du Bois, January 22." *W. E. B. Du Bois Papers (MS 312)*. Special Collections and University Archives, University of Massachusetts Amherst Libraries.
- Wilson, Francille Rusan. 2006. *The Segregated Scholars: Black Social Scientists and the Creation of Black Labor Studies, 1890-1950*. Charlottesville: University of Virginia Press.
- Wilson, Sarah. 2015. "Black Folk by the Numbers: Quantification in Du Bois." *American Literary History* 28 (1): 27–45.