Scientific Racism: The Cloak of Objectivity

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This article reviews an application of sociobiological perspectives on "racial" differences, focusing on the work of J. P. Rushton. Rushton has concluded that, as a result of evolutionary processes, the three major "racial" groups may be hierarchically ranked such that Mongoloids > Caucasoids > Negroids. The assumptions and evidence presumably supportive of Rushton's sociobiological perspective are reviewed and critiqued. The concept of "race" is politically defined; the Darwinian arguments are teleological; theoretical constructs are flawed; and the empirical data bases are frequently misrepresented. This area of research is discussed in terms of the ideological underpinnings of social science inquiry, and the goals and functions of scholarship in contemporary society.

J. Philippe Rushton (e.g., 1988a, 1990a) has advocated a theory in sociobiology whereby Asians, Caucasians, and Africans, as a result of evolution, may be ranked on a wide variety of personal and population attributes (e.g., intelligence, sexual restraint, social organization) such that "Mongoloids > Caucasoids > Negroids." Although carefully avoiding the words "superior" and "inferior," Rushton's ranking makes invidious comparisons that establish a biologically based hierarchy within the human species. This work is controversial, yet it has been distributed and approved in popular and scholarly media.

A recurrent feature of the social sciences has been efforts to prove that there are inherited racial and gender differences. These efforts, although earlier debunked, become reincarnated under different guises (cf. Longino, 1990). Rushton relies heavily upon assumptions and data bases that are deeply embedded in a tradition of scientific racism. His racist thesis is cloaked in the nomenclature,

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language, and "objectivity" of legitimate branches of population genetics, evolutionary psychology, and sociobiology.

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The idea that social science inquiry is influenced by ideology and cultural values is not new (Longino, 1990; Onwubu, 1990). But it is not enough to denounce a line of research because it may be ideologically repugnant; it is necessary to critique that research carefully and dispassionately on its merits (Leslie, 1990; Longino, 1990; Zuckerman, 1990).

Sociobiology and Race

Rooted in Darwinian concepts of adaptation and natural selection, Rushton's sociobiology tests hypotheses derived from the assumption that differences in "reproductive strategies" reflect hierarchical ordering between and within species (see Rushton, 1988a, 1989a, 1990a, 1990b).

Reproductive strategies are said to fall on a continuum from r, where organisms produce large numbers of offspring but provide little or no parental care, to K, where organisms produce few offspring and make a large investment in care and upbringing (r and K are arbitrary designations; see Leslie, 1990, on their origins). According to Rushton (1987, 1988a), oysters (which may produce thousands of offspring with no care) and the great apes (which produce few offspring and provide lengthy upbringing) symbolize the ends of the r/K continuum.

Rushton (1988a) suggested that species may be ranked on the r/K continuum in a way that parallels their evolutionary history and current status within the animal hierarchy. Generalizing from this not-implausible observation, Rushton posited that the r/K distinction provides an index to the evolutionary history—and hierarchical status—of the various human "racial" groups (see Rushton, 1990a, 1990b, for reviews).

This basic assumption of Rushton's sociobiological model improperly generalize, from a between-species observation to account for variability within a species. But this conceptual flaw is only one of a host of conceptual and empirical errors. These errors require careful elucidation.

Unraveling Rushton's Sociobiology

An examination of the assumptions underlying Rushton's sociobiology reveals that the theoretical orientation is, in fact, untenable. The arguments presented below demonstrate that the three-part "racial" classification is invalid; the basic assumption of Darwinian influence is teleological; nature/nurture confounds are ignored; the perspective has many flawed conceptualizations; and the data bases that are used as evidence are frequently misrepresented.

The Concept of Race

Although Rushton (1988a) staunchly defends his "racial" typology, it has been hotly debated within the social science literature (see, for example, Leslie, 1990; Montagu, 1974, 1975; Onwubu, 1990). The arguments against the validity of the concept of race are as follows: (a) it is an ideological invention that supported European and American imperialism; (b) the definition of race as a reproductively isolated group—one that has unique phenotypic characteristics—results in thousands of races, not three; (c) within each of the three "racial" groups, the variation in attributes and characteristics exceeds the average between-group differences; and (d) "racial" classification ignores the overwhelming commonality in the genetic histories of homo sapiens, and this biological evidence points to one race, not three or thousands. Thus, the concept of race is tied to a particular social and political context (cf. Zuckerman, 1990).

Teleology

Rushton's arguments on the nature of race differences are teleological, circular, and therefore comparatively self-sustaining (cf. Bernstein, 1987).

Teleological arguments are ones that presume that end results are purposively caused, or that biological phenomena arise as part of a design (in this case, the design resides in the genes and their adaptiveness). For example, according to Rushton (1990a),

If the threefold increase in hominid brain size over the last 3 million years did not confer greater fitness benefits, it would not have occurred. (p. 134)

More broadly, the basic premise of Rushton's sociobiological model—that observed "racial" differences are caused by evolution—is teleological in nature.

The sociobiological model advanced by Rushton is only viable if one accepts Darwinian assumptions about human evolution (Johnston, 1987). A number of critics have sharply rebutted the applicability of Darwinian models in accounting for the "micro differences" that are apparent between human "racial" groups (e.g., Lynn, 1989; Symons, 1987, 1989; Zuckerman & Brody, 1987). This criticism recognizes that "racial" differentiation occurred comparatively recently in evolutionary history, and that human "racial" groups experienced similar pressures for natural selection (Caro & Mulder, 1987).

The Nature/Nurture Controversy

The quest to understand the origins of "racial" differences has reinvigorated the longstanding nature/nurture controversy. That various "racial" groups differ on a wide variety of physical and psychological measures cannot be denied. But

without breeding experiments and the strict regulation of prenatal and subsequent environments, the relative role of genes vs. environment in the ontogeny of human behavior cannot be validly determined. Moreover, our understanding of the complexities of human genetics is much too limited to derive anything more than vague speculations about gene—environment interactions (cf. Churchland, 1987).

Genes and environment operate together. As Oyama (this issue) points out, nature is a product of nurture, and this is true from the moment of conception, through gestation, and for the rest of life. Attempts to partition the explained variance of any construct into genetic and environmental components are therefore invalid except in specific instances where strict experimental controls have been imposed.

Central to r/K theory is the assumption that organisms lower on the hierarchy have higher reproductive rates than organisms higher on the hierarchy. Rushton (1987, 1988a, 1989b, 1990a, 1990b) pointed to fertility differences between Africans and Europeans, and between Europeans and Asians, as consistent with r/K's prediction that the more "K-selected" populations would have the lower fertility rates (i.e., Asians < White Americans and Europeans < Africans and African Americans). He also argued that "racial" differences in the rate of dizygotic twinning and infant mortality were consistent with the rank ordering generated by the r/K paradigm.

The variables of fertility and infant mortality, however, well illustrate the fallacy in biologically deterministic reasoning, and the difficult if not impossible task of separating genetic from environmental effects. Conception and gestation take place within (biological) environments that range widely in terms of general health and nutritional characteristics. Indeed, the carriers of the genetic code, the sperm and egg, are themselves products of biological environments that affect the vitality of those germ cells. From conception and throughout implantation and gestation, the development of the fetus is inextricably tied to its environmental surrounds. Without the action of genes, there would be no human development. But the genetic influences always operate within an environmental context (cf. Lieberman, 1975; Longino, 1990; Oyama, this issue).

It is well known that Blacks, on the average, suffer from less access to health care, obtain less prenatal care, and live in more impoverished and stressful residential areas than do Whites. Each of these (environmental) factors contributes to infant birth weight and infant mortality. Inasmuch as environmental influences begin to influence developmental outcomes from the very beginning, it is not possible to disentangle genetic from environmental effects without establishing experimental controls that are impossible in research with humans.

An adequate test of racially based theories would require equating the cultural and environmental experiences and histories of the groups being compared. Yet what makes these groups noncomparable is their unique cultural

histories. For Africans and African Americans, this history includes several hundred years of colonialization, slavery, and discrimination (see Lieberman, 1975; Onwubu, 1990; Rex, 1973).

Thus, the question is not whether genes or environment have the greater influence. The reality is that genes and environment are closely interconnected, interdependent, and for all practical purposes, indivisible (see Kagan, 1987, for a related argument). Therefore, the gene/environment question raises an intractable circular paradox.

By extension, the early gene/environment interaction cannot be disentangled from subsequent gene/environment interactions that occur over the course of development. After birth, environmental influences predominate in directing the development of the individual's attitudes, values, and behaviors in virtually every domain of human activity. It is known that Asians, Blacks, and Whites, even those in the United States, live and develop in separate and very different environments (cf. Fairchild & Tucker, 1982). Most of them are educated in separate and unequal environments (Fairchild, 1984). Thus, the catalog of "racial" differences presented by Rushton may be plausibly explained by a host of environmental influences, beginning with the intrauterine environment.

Other conclusions derived from flawed genetic models are invalid on the same grounds. These include conclusions regarding "racial" differences in intelligence (Jensen, 1969, 1987; Rushton, 1988a, 1988c), occupational status (Gottfredson, 1986, 1987) and criminality (Eysenck & Gudjonsson, 1989; Rushton, 1990a; Wilson & Herrnstein, 1985); and indicators of social organization such as family stability, drug abuse, or mental illness (Rushton, 1988a).

Flawed Conceptualizations

Life span vs. life expectancy. In the rush to announce confirmation of the theoretical projections, certain constructs became confused—for example, the difference between life span and life expectancy (e.g., Rushton, 1990a). Whereas it is true that Whites and Blacks differ in life expectancy, evidence has not conclusively demonstrated that Whites and Blacks differ in life span. On the average, Blacks suffer earlier deaths (and therefore shorter life expectancies) due to accidents, disease, and homicide/suicide; but barring these preventable deaths, Blacks and Whites can expect to live about the same length of time, currently about 85 years (see Jones, 1989).

Purposive genes. Sociobiological theorizing requires smart genes. Thus, in order for "racial" differences to accrue by the forces of natural selection, some sort of genetic purposiveness is proposed. For example, Rushton and Nicholson (1988) asserted the following:

if a gene can better ensure its own survival by acting so as to bring about the reproduction of family members with whom it shares copies, then it can also do so by benefitting any organism in which copies of itself are to be found. (p. 46)

The proposed conclusion is that intelligent and purposive genes seek out similar others. This proximal mechanism of gene recognition has been invoked to account for the presumed genetic similarity between close friends and between spouses (see Rushton, 1988c, 1989c; Rushton & Nicholson, 1988), and for the phenomena of altruism and ethnocentrism (Rushton, 1989d, 1990b). Thus, in addition to the five senses, humans also have—if we subscribe to Rushton's fantastic vision—a system for detecting the genetic structure of others.

Flawed Empirical Bases

In addition to the flawed assumptions underlying Rushton's sociobiological theorizing, evidence cited to support the model reveals biases in its selection, interpretation, and representation (also see Kitcher, 1987, for related arguments). Although the amount of literature cited by Rushton is impressive (e.g., Rushton, 1988a, cites 135 references), a check of the original sources reveals repeated misrepresentations. These misrepresentations—whether intentional or accidental—indicate inadequate objectivity (also see Leslie, 1990; Vanderwolf & Cain, 1991; Zuckerman, 1990). Two topics illustrating this bias are described next.

Brain size and intelligence. Intelligence—as measured by the intelligence quotient—is the psychometric cornerstone of Rushton's theorizing about "racial" differences. Intelligence is assumed to be fitness enhancing (an assumption challenged by, among others, Silverman, 1990), and to be a single entity (such as Spearman's g. but see 'Corballis, 1987), and inherited (see Gould, 1981, for a discussion of these points).

Assuming that larger brain size confers greater intelligence, and that greater intelligence confers greater individual and group fitness, Rushton reported that (a) the races differed in brain size—as estimated by tape measurement of their skulls (see Rushton, 1988c); and (b) the races consistently differed in measured IQ (Asians > Europeans > Africans), as reported by Jensen (1969, 1987) and others (see Rushton, 1990a).

Tape measurements of skull size have been found to be highly unreliable and subject to experimenter biases consistent with Rushton's sociobiological interpretations (see, for example, Gould, 1980, 1981; Guthrie, 1976). Zuckerman and Brody (1988), in critiquing Rushton's (1988a) thesis, also pointed to his selective reviews of the literature, and failures to cite literature that would have contradicted his conclusions.

Rushton's (1988a) conclusion regarding brain size was partly based on data provided by Tobias (1970). Rushton (1988a) averaged data provided in a table contained in Tobias (1970, p. 6), but ignored differences in sample sizes and used

the midpoint of ranges in the averaging. However, Tobias (1970) had cautioned readers about the validity of the sources that Rushton averaged, and he concluded that

no comparisons between the mean brain-size of different populations or races permit valid statements to be made on interracial differences, unless corrections have been made for differences in body height. On this basis alone, all comparisons between Negro and White brain-sizes to date are invalid. (Tobias, 1970, p. 9)

Tobias's article, in fact, was an effort to debunk "racial" comparisons of average brain size. He pointed to failures to control for height, health, nutritional status, the environment, cause of death, the lapse of time after death, and the treatment of the brain after death, as factors contributing to the invalidity of such "racial" comparisons. Finally, Tobias (1970) also denied the presumed relationship between brain size and intelligence, a critical point in Rushton's (1988a) framework (also see Gould, 1980, on this point). Rushton's (1988a) failure to acknowledge these caveats renders his conclusions in this area groundless.

In a similar manner, Rushton (1988a) cited the work of Ho, Roessmann, Hause, and Monroe (1981), and Ho, Roessmann, Straumfjord, and Monroe (1980a, 1980b) in supporting his claim that the races differed in brain size:

In a study of newborns, Ho, Roessmann, Hause and Monroe (1981) collated brain weights from 782 autopsy records and found white infants had heavier brains than black infants. (Rushton, 1988a, p. 1011)

According to Ho et al. (1981, p. 245), however,

Since no difference in the brain weight of mature babies was noted between white and black or between male and female infants, our studies indicate that, given a chance for full intrauterine development, the brain will attain the same mass regardless of sex or race.

Indeed, Ho et al. (1981) reviewed their earlier work on differences in adult brain size (Ho et al., 1980a, 1980b) and concluded that the observations of "racial" differences among adult brains "more likely result from environmental than from genetic factors" (p. 246; also see Vanderwolf & Cain, 1991, in this connection).

Rushton (1988c, p. 1011) stated that "Additional evidence for greater Mongoloid intelligence has been documented by Misawa, Motegi, Fujita, and Hattori (1984)." But Misawa et al. (1984) also found that the differences between Japanese and American children (the American children were not described in terms of their ethnicity or race) decreased with age. They concluded that the pattern of differences in a nonverbal reasoning test was due to differences in preschool exposure for the Japanese and American students; that is, it was due to a difference in educational environments. Similarly, Sue and Okazaki's (1990) review of the literature firmly rejected genetic models of Asian educational achievement.

Rushton's (1988a) review also ignored contradictory evidence. Tate and

Gibson (1980), for example, reported a comparison between matched samples of middle-class African American youth (n=48) and White American youth (n=52) on the Stanford-Binet and the WISC-R. Their study reported a mean IQ for the African American sample of 129 (SD=14.4) and a mean IQ for the White American sample of 116 (SD=13.4). The difference was significant with p < .001.

Sexual restraint. Rushton's (1988a) argument includes the idea that K-selected organisms exhibit more "sexual restraint" than r-selected organisms (also see Rushton, 1988c; Rushton & Bogaert, 1987, 1988, 1989). In this connection, Rushton (1988a) cited Haeberle (1978) as confirming the point of view that the races differ in the size of genitalia. According to Haeberle (1978, p. 28), however,

The average length of a grown man's penis is between 3 and 4 inches when flaccid and between 5 and 7 inches when erect. However, there may be great variation in size from one individual to the next. Contrary to some widely accepted myths, the size of the penis is not related to a man's build, skin color, or sexual prowess. A very short man may have a larger penis than a tall one (and vice versa), a white man may have a larger penis than a black man (and vice versa), and a man with a small penis may have more orgasms than a man with a large penis (and vice versa).

Similarly, Rushton (1988a, p. 1015) pointed to one study in this manner: "Abramson and Imari-Marques [sic] (1982) observed that each of three generations of Japanese Americans showed more sex guilt than matched Caucasian Americans." In fact, the Abramson and Imai-Marquez (1982) study showed decreasing ethnic group differences with each generation, to the point where differences disappeared between the third generation of Japanese Americans and Caucasians. Thus, the authors concluded that sex guilt was a product of culture and acculturation, a direct contradiction of Rushton's sociobiological model.

Discussion

This review of sociobiological models of "racial" differences reveals a number of fatal flaws in their theoretical assumptions and interpretations of empirical data bases. Despite these flaws, Rushton and others have obviously found an audience for this work, and the work has managed to pass editorial review and be published. That this state of affairs exists raises serious questions about how social science knowledge is generated in contemporary society.

Research does not accumulate in a vacuum. It is a product of organized society and is conducted according to socially defined rules, values, and conventions (Longino, 1990). As such, social science research is shaped by, and shapes, public opinion about a wide variety of issues (see Longino, 1990; Onwubu, 1990).

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The ideology of inherited "racial" differences has been a worldwide reality since at least the 1500s (Bandopadhyaya, 1977; Fairchild & Gurin, 1978). Western social sciences provided justifications for the "racial" hierarchy that emerged during the several hundred years of imperialism and political, economic, and military exploitation (also see Gould, 1981; Guthrie, 1976; Lieberman, 1975; Longino, 1990; Onwubu, 1990).

This tradition of scientific racism is part of the "cultural inertia" that maintains racism as a contemporary aspect of the modern world. The omnipresence of racist ideology—popularly and in academe—provides a cultural impetus for the generation of racist conclusions in social science. Rushton (1990b) provided a partial "who's who" list of contributors to this ideologically tainted science, past and present: it includes Galton, Burt, Cattell, Spearman, Eysenck, Jensen, and now Rushton.

Policy Implications

Rushton and other social scientists writing on "racial" differences have been notably restrained in their statements concerning policy implications. They typically hide behind a cloak of objectivity and offer their work as "pure" scientific inquiry. But such policy implications are inevitably tied to the work of social scientists, especially those venturing in the realm of "racial" differences (see Albee, 1982; Salmon, 1987). An extra degree of caution should be exercised in studies that could reinforce racist ideology (Zuckerman, 1990).

What are the policy implications of Rushton's sociobiological model? If the condition of Blacks—e.g., their higher infant mortality, shorter life expectancy, lower educational and occupational achievements, higher criminality, etc.—are due in some measure to their genetic endowment, what is to be done?

Implications derived from Rushton's sociobiology inexorably lead to policies that "blame the victim" (Ryan, 1976) for her or his plight, and encourage a laissez-faire attitude toward social inequality (Futterman & Allen, 1987). If African Americans are born to be at the bottom of the human hierarchy, then their current status can be viewed as simply part of their biological destiny. One officited author within the scientific racism camp, William Schockley, once called for sterilization incentives to African American women based on low IQ scores (Schockley, 1972). The possibilities for abuse of these theories are legion, as, for example, the use of race theories to justify the Holocaust in Nazi Germany (see Silverman, 1990).

Ideological and political agendas are prominently revealed in people's stands on issues that perplex our contemporary political system (e.g., employment and affirmative action, crime and punishment). For instance, Gottfredson's (1986, 1987) conclusion regarding the genetic determination of "racial" differentials in employment also questioned the efficacy of affirmative action.

Similarly, Eysenck and Gudjonsson's (1989) emphasis on the genetic determinants of "racial" differences in criminality included strong and clearly stated policy implications: more swift, severe, and restrictive punishments, including the death penalty.

On Social Science Inquiry

Social science knowledge, like any knowledge, emanates from the perspective of the person or group generating the knowledge. White males have established hegemony over the world's political economy. They have also generated theories of White "racial" superiority, coupled with theories of male superiority, which provided ample justification for the maintenance of their political and material control and influence.

Ideological biases provide the "background variables" for any scientific investigation. They frame the research questions and establish the criteria for empirical evidence. In Rushton's sociobiology of race, these ideologies are evident in the questions asked (e.g., How can evidence be garnered to prove inherited "racial" differences?), the assumptions made (e.g., the separation of nature and nurture), the reliance on dubious constructs (e.g., r/K), the evidence garnered (e.g., penis size), and the interpretations made (e.g., that bigger brains are smarter brains).

But genetic models of "racial" differences are only the crudest illustration of how "racial" ideology pervades the scientific enterprise. There has been a tendency to couch this argument solely within the "nature/nurture" controversy. Naturist arguments are often viewed as expressing a racist ideology, whereas nurturist arguments are typically viewed as rejecting such an ideology. Unfortunately, racist ideologies may be exhibited in either naturist or nurturist perspectives. How racism pervades genetic models is comparatively easy to discern. How racism pervades nurturist models, however, is much more disguised.

Because the social sciences are steeped in racist and sexist ideology, most of the published studies on "racial" or gender differences are tainted by bias. All "racial" comparisons are invalidated by the fact of the group's separate culture histories. Equating individuals from different "racial" groups on social class, for example, does not take into account the cumulative effects of exploitation and subjugation. The social sciences have not yet discovered a way to take the historical context into account in empirical studies, a problem related to the issue of nature/nurture interaction.

To illustrate this point, the well-known report on equal educational opportunity, directed by James Coleman (Coleman et al., 1966), concluded that the primary determinants of "racial" differences in academic achievement were the individual's motivation and her or his family and social environments. Coleman

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et al. (1966) rejected the hypothesis that structured inequality in educational opportunities (e.g., per-pupil expenditures) was implicated in the achievement differentials. This conclusion was reached, in part, because of the common practice of controlling for race or class prior to ascertaining the relationship between systemic variables (such as school size or per-pupil expenditures) and achievement outcomes. But when race or class are systematically related to those systemic variables (as when Black children attend overcrowded or underfunded schools), the analysis is rendered uninterpretable. In this example, controlling for "race" simultaneously controls for those variables with which race is correlated, namely, school size and per-pupil expenditures (see Fairchild, 1984).

Longino (1990) called for demonstration projects that embrace a "counterideology" concerning "racial" and gender differences. Such a project was described by Fairchild (1984). Like Coleman et al. (1966), Fairchild (1984) was interested in understanding "racial" differences in scholastic achievement. But unlike Coleman et al., Fairchild (1984) rejected assumptions regarding the need to control for race or class.

Fairchild (1984) examined the school size, per-pupil expenditures, and median achievement levels in the 435 elementary schools that comprised the Los Angeles Unified School District in 1975-1976 and 1976-1977. He reported the following: (a) schools differed in school size (167-1895) and per-pupil expenditures (\$524-\$1242); (b) school size was negatively related, and per-pupil expenditures were positively related, to median achievement levels; (c) approximately 20% of the variance in school achievement was accounted for by school size and per-pupil expenditures.

Only at this point did Fairchild (1984) enter the "racial" data into the analysis (social class data were unavailable). Instead of "controlling" for race, he examined whether "racial" composition was systematically related to school size or per-pupil expenditures. It was School size was positively related to percentage Black and percentage Hispanic, but negatively related to percentage White; per-pupil expenditures were negatively related to percentage Black and percentage Hispanic but positively related to percentage White. Controlling for race in this instance would have resulted in masking the effects of differences in school size and expenditures because of their correlations with racial composition.

Thus, Fairchild (1984) offered an alternative explanation for the achievement differentials evident between "racial" groups: In Los Angeles (and probably many other American cities), African American children and Hispanic children attend schools that are overcrowded and underfunded. Studies on achievement that examine genetic composition, motivational factors, or family and social environmental factors very often fail to control for this systematic inequality (Murray & Fairchild, 1989). This inequality also has an historical 112 Fairchild

component such that its effects are likely to accumulate across generations, and to affect other developmental outcomes: occupational status, criminality, and psychosocial adjustment.

Conclusion

If ideology is inextricably tied to the generation of knowledge, then all social science writings—including this one—involve certain ideological biases or political agendas (see Fairchild & Tucker, 1982). These biases are typically unstated. The author's ideological biases are as follows: (a) The idea of inherited "racial" differences is false; instead, "race" is a proxy for a host of longstanding historical and environmental variables. (b) Social science has the mandate of applying its theories and methods to alleviate human suffering and inequality (Fairchild, 1988).

Part of our task involves identifying the ideological biases inherent in much of social science inquiry, and debunking that inquiry. Rushton's sociobiology of racial differences is unscientific in its assumptions and interpretations, and therefore may properly be regarded as scientific racism; but so, too, may many of the nonevolutionary investigations of "racial" differences.

The more important task is to develop alternative research paradigms that redress inequality. This effort must be aware of the difficult philosophical questions about the proper functions of social science knowledge in society. It must acknowledge the influence of historical factors in the development of group differences and take these influences into account. It must provide the basis for redefining excellence in research, for diversifying academia, and for solving the problem of the unequal societal allocation of resources, power, and developmental outcomes.

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