# Science and the Race Problem

## A report of the AAAS Committee on Science in the Promotion of Human Welfare

Certain statements published during the last few years by persons of academic attainment have asserted that scientific evidence proves that the members of Negro races are inherently less competent than individuals of other races of mankind. The authors of these statements also claim that the alleged scientific data justify inequities in Negro civil rights and ought to invalidate the U.S. Supreme Court decision of 1954 on school segregation. On the other hand, numerous scientists competent in the study of race have strongly rejected both the validity of these assertions regarding the characteristics of Negro races and the political conclusions apparently based on them.

The issues raised by this conflict go far beyond the usual limits of a disagreement among scientists, which members of the profession can resolve among themselves in the normal course of scientific procedure. The issues concern not only the validity of allegedly scientific conclusions but also fundamental principles that affect the integrity of science. Moreover, the alleged evidence is being used to challenge a principle fundamental to our political system, and to influence the outcome of the present crisis in the relations between racial groups in the United States.

Claims regarding scientific evidence of the "inferiority" of Negro races have been put forward in their most coherent form by W. C. George and Carleton Putnam (*1*), who make the following main assertions.

1) They claim that recent judicial and political decisions to end segregated treatment of Negroes fail to reflect the weight of modern scientific evidence. This evidence, they assert, shows that human capability is racially determined and that Negroes are inherently less well endowed than white persons with respect to intelligence, and with respect to other factors which lead to competent behavior in a modern society (*2*). They assert specifically that the decision of the U.S. Supreme Court in 1954, declaring segregation in the schools illegal, fails to recognize scientific evidence which supposedly establishes that Negroes are inherently less capable of benefiting from education than white persons (*3*).

2) They allege that certain groups of scientists have misled the public and government officials and that, for political reasons, these groups of scientists have conspired to suppress and minimize evidence which is purported to demonstrate important Negro-white inequalities (*4*). This allegation has now affected the educational community itself, for a resolution adopted by the Louisiana State Board of Education on July 25, 1961, states:

> WHEREAS, There is increasing evidence that the sciences of biology and anthropology are being distorted and perverted to serve the purposes of certain pressure groups whose aims are inimical to the customs, mores, and traditions of this Nation. . . .

These allegations confront the scientific community with an unavoidable challenge, for in our view all scientists bear a responsibility toward the proper social application of scientific knowledge and have the duty to resist the corrosive effects of social and political pressures on the integrity of science. It is essential, therefore, that we determine whether these claims are valid, and, whether valid or not, what their significance is to the scientific community and to the public.

Of greatest concern to those who assert that there is a scientific basis for maintaining social inequalities between Negro and white persons is the U.S. Supreme Court decision on segregation in the public schools (*Brown v. Board of Education*, 347 U.S. 483, May 17, 1954). According to Professor George this decision fails to consider scientific evidence on racial differences, which his paper is intended to present.

The background of this decision is relevant to our considerations. The principle of equal access to the benefits of citizenship by all citizens, regardless of racial origin or religious belief, has continually been affirmed as a fundamental principle of American government and is embodied in its basic instruments, especially the Constitution and its amendments. Since the end of the Civil War, when the specific applicability of this principle to Negroes was established, there have been a series of judicial examinations of the material circumstances which are to be considered "equal." However, there has been no successful judicial challenge to the basic principle of equal civil rights for all citizens. In 1896, in *Plessy v. Ferguson* (163 U.S. 537), the U.S. Supreme Court ruled that the principle of equality could be implemented by "separate but equal" facilities for Negro and white persons. The question at issue in the 1954 Supreme Court decision was whether separate school facilities inherently lead to inequality of treatment; again the basic *principle* of equality was not at issue.

The only reference to science in the 1954 Supreme Court decision appears in connection with footnote 11 to that decision. This footnote refers to a section of the decision that considers the question, "Does segregation of children in public schools solely on the basis of race, even though the physical facilities and other 'tangible' factors may be equal, deprive the children of the minority group of equal educational opportunities?" The Court answers this question in the affirmative and states, with respect to Negro children, "To separate them from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone. . . . Whatever may have been the extent of psychological knowledge at the time of

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The members of the committee are Barry Commoner, Washington University, *chairman;* Robert B. Brode, University of California; T. C. Byerly; Ansley J. Coale, Princeton University; John T. Edsall, Harvard University; Lawrence K. Frank; Margaret Mead, American Museum of Natural History; Walter Orr Roberts, National Center for Atmospheric Research (ex officio AAAS Board representative); Dael Wolfle (ex officio). Responsibility for statements of fact and expressions of opinion contained in this report rests with the committee that prepared it. The AAAS Board of Directors, in accordance with Association policy and without passing judgment on the views expressed, has approved its publication as a contribution to the discussion of an important issue.

*Plessy v. Ferguson* this finding is amply supported by modern authority [11]."

Footnote 11, which then follows, is a list of references dealing *solely with the social and psychological effects of school segregation on Negro children.* Thus the only purpose of the Court's reference to "science," or to "authorities," is to further support the Court's finding that segregation has untoward effects on the "hearts and minds" of Negro children. There is nowhere in the Supreme Court decision an appeal to science that relates to the nature and the origins of racial differences.

The evidence cited in Professor George's paper, which in his view supports the conclusion that Negroes are inherently less capable than white persons, is quite irrelevant to the issue under consideration. If he wishes to counter the scientific support in the Supreme Court's decision he should come forward with contrary evidence regarding the *effects* of segregation on Negroes. His paper does not offer such evidence.

In our opinion, the defect exhibited by Professor George's paper seriously compromises the usefulness of science to the judicial process, in which science is a necessary means for establishing the material circumstances germane to the issue. Like society generally, the courts must depend on the integrity of science for assurance that factual matter put before them has the validity which we associate with scientific evidence. Such validity depends on the accuracy and completeness of the data, but also on their actual relevance to the issue. To criticize a judicial decision by means of scientific evidence which is on its face wholly irrelevant to the issue is to conceal a fallacy in the cloak of scientific precision.

There is, in our opinion, no evidence to support the claim, advanced by Professor George and Mr. Putnam, that a group of scientists has conspired to mislead the public about the scientific evidence regarding racial differences. This assertion can only reflect a lack of understanding of the nature of the scientific process.

A scientist can obscure the truth about a scientific question only by keeping silent about what he knows, or believes he knows, or by otherwise obstructing the publication of scientific results. Erroneous statements, so long as they are openly published, do not indefinitely impede the progress of science, for they are ultimately corrected by new observations and interpretations. If scientists adhere to the rule of open publication of results, interpretations, and theoretical derivations, nothing that they do can prevent the operation of the self-corrective processes of science. It is this very process of claim and counterclaim which accomplishes the gradual progress toward truth in science.

The scientists who have opposed the notion that Negroes are inherently "inferior" have been far from silent. If these scientists have assiduously expressed what they know and what they believe about racial difference, then their duty toward the truth has been performed. If their ideas have spread and attracted the attention and support of other scientists, then it should be clear that they have in fact successfully withstood scrutiny and criticism.

## Significance of Available Scientific Evidence

Setting aside, as unfounded, the claim that scientific evidence which demonstrates important inequalities between Negro and other races has been suppressed, what *can* be said regarding the state of modern scientific data on the characteristics of racial groups? What is the relevance of the present information to social judgments regarding Negro civil rights?

The scientific study of the characteristics of racial groups (*5*) involves, at the least, a determination of the relative degree to which such characteristics are influenced by inheritance, by the physical and cultural environment, and by the effects of interactions among racial groups. The total problem is enormously complex, and contains within itself a series of successively broader sub-problems: the biological mechanism of inheritance of individual characteristics, such as blood type, which can be measured precisely and objectively; the variability of such characteristics within specific population groups of various sizes in different environments; the problem of measuring more complex characteristics, such as "intelligence," by procedures which distinguish between innate ability and the effect of cultural factors; the influence of particular social factors on the expression of potential innate characters in the individual; the effects of interactions among groups whose members come in contact with each other through education, immigration, social mobility, and inter-marriage. These problems differ greatly in their accessibility to precise scientific investigation and in their relevance to the issue of Negro civil rights.

Scientific study of the simpler characteristics observed in individuals of different racial origins—for example, the genetic basis of blood protein characteristics—is readily accomplished by a number of analytical techniques and has made notable progress in recent years. However, while such results can make important contributions to our knowledge of general biological processes they tell us little or nothing about the capability of any particular group to participate successfully in a given culture. On the other hand, characteristics which might be relevant to competence in a particular culture, such as "industry," "drive," and "persistence" (terms sometimes employed to describe alleged differences between races) are themselves so strongly dependent on social factors that they cannot be evaluated in a social framework which sets arbitrary limits, based on an individual's racial origin, on his opportunity for development.

Negroes in American society are still subject to discrimination with respect to economic, educational, and social opportunities. This basic fact has such a profound effect on the expression of Negroes' innate capabilities, and may so distort the meaning of the criteria used to evaluate them, as to effectively obscure the meaning of attempted measurements of such capabilities. In general, the more closely we approach the estimation of those human characteristics which are of greatest significance in social interactions, the less exact are the observations and the more they are encumbered by the distorting effects of the culture on the observer himself. In these circumstances, an objective scientific evaluation of inter-racial differences in our society, which imposes significant limitations on social behavior on the basis of race, is almost impossible to achieve.

These difficulties preclude the effective use of measurements of competence as a valid basis for questioning the ethical judgment, so firmly incorporated into our principles of government, that all citizens are to be regarded as equally entitled to the benefits of citizenship. We know of no scientific evidence which can challenge this axiomatic political principle. The assertion that such evidence exists ignores the rule of relevance and the limitations inherent in our knowledge of the complex interactions among so-

cial groups. In addition, by fostering the illusion that the social decisions about interracial relations can be determined by "objective scientific fact," it shields the individual's conscience from a confrontation of the grave moral issues which at present confound the relations among racial groups.

## Scientist's Responsibilities

The issues raised by alleged scientific evidence to justify social segregation of racial groups confronts the individual scientist and his professional associations with serious responsibilities.

All science is concerned with the extension of what we know about nature. Man, as a part of nature and as a unique form of life, is, of course, an important area of study. There are, we believe, no valid barriers—beyond those dictated by humaneness—to preclude scientific study of the biology of man, including the nature of racial characteristics and their inheritance. Such research will surely add—to a degree dependent on the significance of the observations—to what we know about nature.

Such investigations are difficult of analysis, the results often attenuated by inadequate definition and by relatively large errors of measurement, and the interpretations open to disagreement. Despite these difficulties, science contains well-proven methods for approaching the truth, for winnowing the data, reducing the errors, and re-examining interpretive ideas. But these will succeed only if scientists follow the cardinal rule of scientific discourse: to offer their results and interpretations for open publication in places which are subject to the scrutiny of their scientific peers.

When scientific questions become closely related to public policy there may be a tendency to forego publication in the open scientific literature. Instead, basic scientific considerations may then appear only in special reports prepared at the request of an agency of government. This practice is regrettable, in our opinion, for by precluding the self-corrective effects of open publication it deprives not only the public but also those who have commissioned the report of the full benefits of scientific knowledge.

An example of the effective operation of this self-correcting process within the scientific community may be found in a series of events associated with a UNESCO report on the race problem. This report was prepared by a group of anthropologists, psychologists, and sociologists convened by UNESCO, in December 1949 and published by UNESCO on July 18, 1950. After the report appeared, the British Anthropological Journal, *Man,* published a critique which held that the document tended to confuse race as a biological fact and the concept of race as a social phenomenon. In our view, the report is also open to criticism because it attempted to provide a scientific justification for the ethical judgment that all human beings are equally entitled to the benefits of society. In response to criticism, UNESCO convened a second conference that included many physical anthropologists and biologists, which prepared the revised statement of 1951, "Statement on the Nature of Race and Race Differences" (see *6*, pp. 493–506). This is an excellent example of orderly scientific procedure, which is essential in all aspects of science, and particularly important when the scientific evidence deals with a matter of immediate public concern.

In contrast, Professor George has chosen to report his highly contentious views on racial differences in a form which is not readily amenable to the corrective effects of scientific criticism —a report commissioned by the Governor of Alabama (*2*). Surely in an area which is subject to such serious disagreement, no scientist can properly put forward his own personal conclusions as representative of the state of knowledge without first subjecting them to the open scrutiny of his scientific peers.

For reasons already stated we believe that available scientific data about human heredity and racial differences are not applicable to the ethical judgments that determine the civil rights of racial groups. Those who present their own views on this judgment as though they *were* scientific evaluations are simply creating a controversy unlikely to be resolved by scientific means. Such a disagreement will remain as a perplexing exception to scientists' devotion to objective truth, and thereby erode the usefulness of science for the orderly solution of social problems.

The resolution of this controversy does not require an authoritative restatement of the scientific evidence regarding racial differences. More important is improved education which might help the public understand when scientific evidence is relevant to problems of racial adjustment and when such evidence only serves to cloak a moral issue. We believe that the public should be informed that any effort to use purported "scientific evidence" regarding biological distinctions between racial groups to screen an attack on the principle of equal civil rights for all citizens finds no support in either the available evidence or in the principles of science.

There is, however, another type of scientific evidence which stands in quite a different relation to this problem. There is a considerable body of evidence on the way in which racial groups affect each other; how race differences become embodied in the cultural framework of human relationships, and how these interactions affect individual members of majority and minority groups: Myrdal's *The American Dilemma,* which is referred to in footnote 11 of the 1954 Supreme Court decision, is an outstanding example of such research. At this time, when the contradictions between the Negroes' legal right to equality and the actual state of American society have become so acute, it is important that all citizens understand how inequalities in the civil rights of different groups may affect the lives of individuals in all groups. Scientists can do a great deal to help the public understand this problem and thereby contribute to a more harmonious resolution of our present difficulties.

## Conclusions

We conclude that the available evidence on the measurable differences among racial groups cannot properly support a challenge to the principle of human equality, which is assured by the Constitution of the United States. The use of purported "scientific evidence" to justify noncompliance with the Constitution debases both science and the human conscience. A continuing effort must be made to improve public understanding of what is known about the results of disharmony among racial groups and to illuminate the causes and the effects of this conflict, which continues to threaten the welfare of all mankind.

### Notes

1. Wesley Critz George: A.B., Univ. of North Carolina, 1911; A.M., Univ. of North Carolina, 1912; Ph.D., Univ. of North Carolina (zoology) 1918; Prof. biol., Guilford College 1916–17; Maule Fellow, Princeton, 1918; Adj. Prof. Zool., Univ. of Georgia, 1919; Assoc. Prof. Histology and Embryology, Univ. of Tennessee, 1919–20; Assoc. Prof.

Anatomy, School of Med., Univ. of North Carolina, 1920–24; Prof. and Head of Anatomy Dept., 1940–49, Prof. emeritus, 1949—. Carleton Putnam: B.S., Princeton, 1924; L.L.B., Columbia, 1932; author of *High Journey, a Decade in the Pilgrimage of an Air Line Pioneer* (1944), *Theodore Roosevelt* (a biography) (1958); *Race and Reason* (1961).

2. Professor George states: "Experience has shown that Negroid peoples have the desire to utilize the products of a high culture but they seem not to possess the combination of human qualities necessary to originate them. Nowhere in the world have they demonstrated that they have the creative capacities (the intelligence, the industry, the drive and the persistence) to make a civilization; nor is there an advanced civilization in any area where there has been a high degree of absorption of Negro genes into a white population." [In "The Biology of the Race Problem," prepared by Commission of the Governor of Alabama, 1962 (pp. 73–74)]
3. Professor George states: "When the Justices of the Supreme Court abandoned former legal precedents and the historic meaning of the constitution, and based their decision in *Brown v. Board of Education* upon 'science' and the opinions of 'authorities' they inevitably made the validity of their ruling dependent upon the truth and validity of their scientific material. This should have been subjected to critical examination and was not. . . . As a contribution to presenting such evidence and for the purpose of weighing the merit of dogmas built up and imposed upon the public as the basis for revolutionary social and political programs, it is the object of this study to ask certain questions of a fundamental biological nature and to see what answers are given by the facts as discovered and reported by the most credible scientists. Some of these questions are:

"1) Are babies born equal in the biological sense, or are there significant differences between them before environment plays a part in molding them?

"2) What is the mechanism of biological inheritance?

"3) Is the difference between the White and Negro races primarily a 'paint job' or are there differences of such fundamental nature and significance that they should be taken into consideration in deciding upon social and educational policies involving the relations of the races?

"4) Are significant differences in individuals and in races hereditary or are they produced anew in each generation by environmental influences?

"5) What should we expect to be the long range results of a program that would lead to racial amalgamation?" [*Ibid.*, pp. 1–2]
4. Mr. Putnam states: "I do not believe that ever before has science been warped by a self-serving few to the deception and injury of so many." [C. Putnam, *Race and Reason* (Public Affairs Press, Washington, D.C., 1961) p. 22]
5. The definition of race provided by S. M. Garn in *Human Races* (Thomas, Springfield, Ill., 1961) is appropriate here: "A race in man, as in any living form, is a population, a population of men, women and children, of fathers, mothers, and grandparents. . . . Members of such a breeding population share a common history, and a common locale. They have been exposed to common dangers, and they are the product of a common environment. For these reasons, and especially with advancing time, members of a race have a common heritage."
6. *Race and Science* (Columbia Univ. Press, New York, 1961).

**MEETING REPORTS**

# National Academy of Sciences: 100th Anniversary Program

In celebrating its 100th birthday last week, the National Academy of Sciences also celebrated the greatly increased range of human knowledge of this and other galaxies, of the earth, and of the nature of life: a century's harvest to which its members, some of the most eminent men of American science, had made important contributions.

The anniversary also marked a great change of another sort. Abraham Lincoln was the president who signed the Act of Congress that established the National Academy, and the best indication of the intimacy of Lincoln's interest in the matter is the story of how, often sleepless in the darkest year of the Civil War, he visited the North Tower of the Smithsonian to watch Joseph Henry's midnight experiments and even held the lantern.

The light from the tower was misunderstood: the story goes on that excited citizens rushed to the White House to say that the scientists in the Smithsonian (where the Academy then met) were signaling to Confederate troops encamped on the other side of the Potomac. In its dominance in the affairs of men, science may have reached the point where a myth or two is inevitable; the tale of the public alarm at the light from the tower should serve reasonably well.

There could scarcely have been a more impelling symbol of how much the power of American science and the power of American government have increased, and of how much the relation between the two has changed over the century, than the major event of the Academy's birthday party: that moment in Constitution Hall when President Kennedy, flanked by the National Academy Council, confronted an assembly of more than one-half of the living members of the Academy and their distinguished guests representing the scientific achievements of most of the other nations of the world.

The President spoke of the "wholehearted understanding today of the importance of pure science" and then went on to devote much of his speech to the applied problems on which he hopes science will work. Missing from his list was the most expensive and most debated of American society's current objectives: the $20 billion program to land men on the moon.

The Academy anniversary came at a time when Congress is no longer viewing requests for increased support for science with enthusiasm, and this new severity is reinforced by old public misgivings about the scientific enterprise—a doubt perhaps only temporarily alleviated by the aroused feelings that followed Sputnik.

Despite the economic abundance that has followed on the heels of scientists' urge "just to know, to find or perhaps make order out of the otherwise chaotic jumble of immediate experience," as I. I. Rabi put it in the final lecture of the Academy's program, the community has not felt really at ease with these wise children who never grow up. "Like children, who in all innocence and high excitement bring a dangerous spider into the house and frighten the wits out of the elders," Rabi said, "the scientist emerges with a smallpox vaccine or an atomic bomb."

The hard matter of choice intruded at the Academy's birthday party when Linus Pauling said, at the end of a brilliant summary of the decisive role of molecular architecture in living systems, that the "only thing we lack to make an enzyme is the money."

Pauling, the only man to win both the Nobel Peace Prize and the Nobel Prize in science, called the project to land a man on the moon "a pitiful demonstration" as a vast gamble for prestige and said that it would be possible "to answer 1,000 interesting and important questions about the human body for every one question answered about the moon. But we can't get the engineers or the money to build the computers and x-ray equipment we need to take our analyses of molecular architecture farther."