

EUGENICS

The Human Future

The human future and improvement of mankind depends not on race or color but on saving genes for superior ability wherever they are found.

By **DR. FREDERICK OSBORN**

Chairman, Board of Editors
American Eugenics Society

➤ **NO ONE KNOWS** what capacities, physical, intellectual or emotional, may be needed to fill all the niches in our complex and changing civilization. Ask any dozen people and they might describe a number of ideal types, but would probably give little thought to the environment these perfect men would have to function in. This would certainly be putting the cart before the horse. Nature did not work that way.

In the long time during which the first living cells evolved into the complexity of man, nature was simply selecting the various stocks which survived from one generation to another. Man survived in many different environments, and both physical qualities and intelligence were factors in his survival.

With the coming of a more civilized life, the relationship between ability and survival became less direct. Social and psychological factors began to influence size of family. The risk of death was affected more by occupation than by personal characteristics.

We do not know what was the course of evolution during this recent period but there is no evidence that, on the whole today, human stocks are either superior or inferior in their genetic make-up to the people of 10,000 years ago. What has been added has been a social inheritance so complex that man's capacity to handle it is stretched to the limit. If man's genetic constitution should now deteriorate, his future would be dark indeed.

The Shape of Society

Today in the United States over 97% of all children born alive live to be 30 or older. Death is no longer selective with respect to differences in intelligence or personality. In a eugenically oriented society, selection for these qualities must be effected by the differences in size of family as between people of different kinds of intelligence and different personal qualities.

In general, it appears that, with the exception of certain sterility problems, differences in size of family are not much influenced by differences in health or other personal characteristics but result mainly from a great variety of economic, social and psychological pressures which influence the number of children different individuals will have.

The interest of eugenics is in how these influences affect the decisions of different

types of couples as to the size of their families.

Under what circumstances do intelligent people have more children than the less intelligent? Are the reactions of racial minority groups different from those of the white majority? Should people belonging to minority races be treated as a group, or on an individual basis? Are the public's views on race based on the facts?

To answer these questions we must first ask what race is, and how the races differ in socially significant attributes.

Changing Attitudes Toward Race

At the end of the 19th century the idea that there was a hierarchy of races was widely accepted by many in the upper classes of Europe and Great Britain. After the *liberte* and *egalite* of the French Revolution it was comfortable for the well-to-do to feel that they belonged to a superior race, with their position justified and secured by nature.

Early in the century the new science of human genetics made it suddenly and abundantly clear that biological inheritance is not a blend of the qualities of the father and mother but a recombination of the thousands of their genes passed on by inheritance.

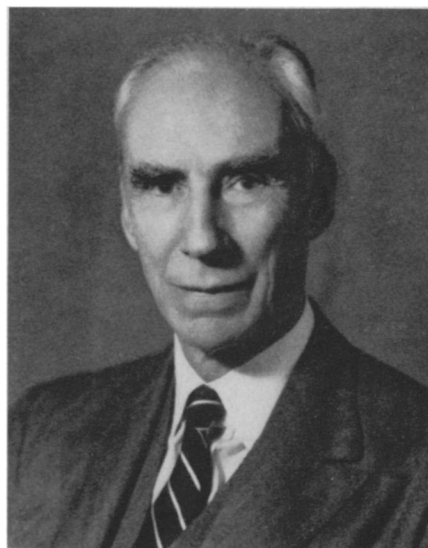
Each gene contributes to specific characteristics and is passed on separately in its individual entirety. One particular quality may be passed on through the mother, another through the father. This is as true of the genes which contribute to the development of intelligence and personality as it is of those which determine eye color.

Except for identical twins, no two individuals have a similar set of genes. That two people have the same genes for skin color does not mean that they have the same genes for blood group or intelligence, or for any other quality. People called of one race because they have the same color and physical proportions are found to differ among each other in almost every other characteristic.

Race Ideas Resurrected

Following on this new and objective knowledge, unscientific doctrines of race superiorities appeared to be dying out. But quite recently the doctrine and even direct quotes from Hitlerian pseudoscientists have been resurrected to serve the cause of segregation.

Pamphlets have been widely distributed in the United States and even in the schools in some areas of the southern states to impose on the uninformed a quite distorted



DR. FREDERICK OSBORN

picture of the scientific thinking of today regarding racial differences.

Human beings have a deep emotional interest in their own kind. We tend to dislike people who are different in features, color or behavior. Huck Finn and Jim the runaway slave had a long discussion as to whether the two Frenchmen were people. It was decided that they were not, since Huck and Jim could neither understand them nor be understood.

Any of us, however generous our natures, who have ever associated with people entirely lacking in education, or with people stricken by poverty or by disease, must admit, I think, that our pity is not unmixed with a sense of superiority. If the human spirit is thus so protective of self, we must approach the scientific findings on race with a detachment and objectivity which will tax our power.

Scientific Findings on Race

The first classifications of the races of man were made from visual observations of color and physical form. By the 19th century these were being supplemented by more careful measurements of physical characteristics and pigmentation.

Scientists reached general agreement on a broad division of most men into three main groups of races, Mongolian, Negro and white, or Caucasian. Theories were evolved to account for racial differences. Some held that inheritance was by "blood" and that a mixture of bloods "diluted" the strain, which was then no longer "pure."

With the turn of the 20th century theories about race began to be tested against scientific facts developed by anthropologists in the field and by the new sciences of genetics and psychology. Today there is general agreement among scientists on a number of findings about race, some in

rather startling contrast to earlier theories.

The elaboration of these findings is beyond the scope of this article or the competence of its author. For their significance to the progress of eugenics we need only list and briefly summarize those particularly related to our subject.

Differences Within Races Greater

Differences within races are greater than average differences between races for many important characteristics.

The major races and the subgroups into which they are sometimes broken down are not composed of individuals all of whom are alike.

Except for general similarities in color and form of face and body, which are their so-called racial characteristics, individuals may and generally do differ widely, even in their physical characteristics, while showing every sort of variation in intelligence and personal qualities. And on the borders of every race there are individuals whose particular assignment is doubtful.

No Superior Races

There is no scientific evidence for "superior" races.

Over the long past the physical differences between the races must have borne some relation to the various environments in which the differentiation took place. But today it is hard to prove that the differences are suited to particular environments, except in the case of some specialized group like the Eskimo or the differences between white and Negro in adaptation to moist heat and cold.

All races produce individuals differing widely in vitality, longevity, athletic ability and endurance, with almost no measurable differences in the average between different races.

In test intelligence and personal traits, development of which are greatly affected by even small differentials in the environment, the average differences are no greater than could be accounted for by known differences in the environment.

No Pure Races

Studies in human genetics indicate no pure races. Genes for various important characteristics are found in different frequencies in populations all over the world.

The genes which determine the inheritance of blood groups and blood antigens furnish an excellent example of the diversity within each race. The different blood groups are inherited as separate entities. The genes for the four best known groups, A, B, AB and O, are widely scattered through all the major races. Yet type A is dangerously antipathetic to type B and vice versa. A white man of type A will be killed by a transfusion of B blood from another white man but is benefited by a transfusion of A blood from a Negro just as much as by the A blood of a white man.

No More Primitive Race

Of the major races, none is more "primitive" than another. "Primitive" characteris-

tics are about equally scattered among the major racial groups.

The thin lips of the white race, for instance, are simian and compare to the full nonsimian lips of the Negro. But the Negro has a flat broad more simian nose compared to the thin nonsimian nose of the white.

The list of such comparisons can be extended almost indefinitely. They show differences between races, but do not give evidence on evolutionary "superiority."

Hereditary defect and susceptibility to disease cannot be blamed on race as such.

Genetic defects are the results of mutations, and the races do not differ in the rules which govern their distribution. A high incidence of a defect in small isolated communities cannot be assigned to race but to conditions which have brought about and maintained a high concentration of defect in a particular locality.

No Race More Intelligent

There is controversy on "racial intelligence."

When people speak of one race being "more intelligent" than another they are usually implying that the difference in intelligence is due to a difference in the genetic or hereditary quality of the different races. They are thinking of a sort of "racial intelligence" as though intelligence was the product of some inner force. But intelligence develops only in reaction to an environment.

A child kept from all human contacts grows up wholly disoriented and unable to take any intelligent part. Given superior educational environments, children average better intelligence than their friends with less education.

There are differences in the hereditary capacity for developing intelligence, but in the process of development heredity and environment are almost inextricably intertwined.

Identical twins have exactly the same heredity. By studying identical twins separated in early infancy and given different kinds of homes and different amounts of education, we find that test intelligence is directly related to extent of education and the twins may differ to a marked extent if their education has been different. But in a closely similar educational environment the tested intelligence of identical twins is usually extraordinarily alike, while non-twin brothers in the same environment show marked differences in test intelligence.

Such studies give evidence that individuals differ in genetic capacity for intelligence but give almost no information on whether the genetic difference or the environmental differences or a combination of both are responsible for the differences between any particular two individuals.

Races are composed of great numbers of individuals, each differing from the next in genetic capacities and in the environment in which he has grown up.

To measure all these individual differences and then get an average genetic capacity for a race as a whole would be of course an impossible task.

The very nature of intelligence tests

makes them of little value for racial comparisons, because a test developed on one race may not touch the experience of another. You cannot test the intelligence of a farm boy by asking him the cost of a ride on the subway nor that of a city boy by asking him which end of a cow gets up first.

Both inbreeding within small isolated groups and outbreeding or race mixture have been essential factors in the evolution of man.

From the earliest times in human history, migrations, wars or even sometimes tribal customs have made for the mixture of different breeds. Recombination of hereditary variations derived from many different ancestral stocks is a major factor in the physical variety of individuals within every race.

Scientific studies on race crossing do not indicate that it necessarily causes deterioration. The quality of the mixture seems to depend on the quality of the individuals involved, rather than of that of the races.

Human Changes Rapidly

The evolution of man took a long time. However, as he became established in all his variety, changes in the proportion of the different varieties could take place rapidly.

Whenever the environment changed in such a way as to help or to hinder the survival of an existing characteristic, then the proportion of people with that characteristic could be changed within only a few generations. The introduction of birth control is an example of how rapidly new conditions can make themselves felt.

The first result of the introduction of birth control in the United States was a reduction of birth among the more educated people with no corresponding reduction among the poorer and less educated.

The differential between these groups reached its peak during the 1930's. In a 1935 study of a national sample of white women, the variations in general fertility from the average of 100 were, for college women, 69; for high-school women, 95; for 7th-8th grade graduates, 125; for those who left school before the 7th grade, 146 (Kiser, 1942).

Many social scientists were concerned by such differentials in births. Whatever their genetic effect, they were a handicap to education and social advance.

Since World War II there has been leveling off of these differentials in the white population, with little change among non-whites.

In 1960 a study was made of a national sample of white and non-white women age 18 to 39. For the college women in the group the number of children expected was 3 for the white mothers and only 2.4 for the non-white mothers. But for the mothers with only a grade school education, the white women expected 3.7 children and the non-white women 4.7.

Among the whites the large differentials of 1935 were much reduced, but among the non-whites they were larger than ever.

Since the educational levels of children tend on the whole to follow the level of

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the parents, these differentials must be a serious handicap to educational advances.

The non-white population still showed the old differentials and to that extent, they are handicapped in their efforts to improve the education of their children.

Births High When Education Poor

With today's public health and medical services the death rate everywhere is low. However, where there is poverty and where standards of education are poor, the birth rate stays high.

Among Negroes in the past death rates were high and birth rates were reduced by sterility. Thus, the proportion of Negroes declined from 19.1% of the total population in 1790 to 14.1% in 1860; 11.6% in 1900, to a low of 9.7% in 1930; and rose to 10.6% in 1960, and is still rising.

Net rates of reproduction 1905-10 were 1,339 for whites, 1,329 for non-whites. For 1935, whites 958, non-whites 1,108; for 1956, whites 1,660, non-whites 2,178; and for 1960, whites 1,664, non-whites 2,093.

Even more important, competent Negro families with a better education are now having smaller families than the corresponding whites, while the marginal Negroes have more children than the corresponding whites.

This would be a dangerous trend if it should continue for long. The least educated parents have in turn the least educated children, and our efforts towards a

higher level of education can be largely or wholly offset by such differentials in births.

Birth control and differences in education are not the only factors which can bring about rapid changes in racial qualities. Migration can be selective, wars can change the composition of the group or race. These factors are selective of particular types of individuals within the group.

We know that differences between individuals in intelligence and personality are greater than the average differences between racial groups, and it seems likely that selective changes brought about by the environment may change the average qualities of a racial group more rapidly and more fundamentally than changes brought about by race mixture.

Every racial group has a certain proportion of genes for high ability; their frequency will increase or decline according to the reproductive rates of its able stocks.

The effects of race mixture will depend on which family stocks intermarry and on the conditions for survival.

The lesson of the last 30 years is that in a group in which the great majority have a good education, good economic conditions and access to effective methods of birth control, the abler stocks survive in about as great a proportion as the less able, and the group as a whole will have a relatively low birth rate.

However, in a group of people, whatever their race, among whom the great majority have a poor education, poor economic conditions and limited access to birth control there will be a high birth rate, with the less able stocks surviving in greater proportion than the able stock.

It appears that ever since World War II, Negroes as a group have been increasing in numbers more rapidly than the whites, with a probable trend during this period towards producing relatively fewer able individuals.

This is the kind of dyagenic situation which eugenics aims to remedy.

Road to Eugenic Improvement

Eugenics is not concerned with color of skin, or facial or bodily characteristics, unless it is shown that these features of man are related to his genetic capacity for socially valuable qualities, such as intelligence and character. Such a relationship has never been proved and theoretically is highly improbable.

Eugenics is not much concerned with the unsolved question of whether the propor-

tion of hereditary ability is greater in one race than in another.

Eugenics is concerned with saving the genes for superior ability wherever they are found, and increasing their frequency. It would do this by a return to a process of selection, different in method but similar in results to the selection practiced in nature in the past, and just as unconscious.

Death Not Selective

Since the death rate is everywhere uniformly low and deaths are no longer selective according to ability, selection in man must be by variations in births. Voluntary decisions of parents as to size of family, made in their own interests, must be on the whole of a sort to favor the interests of society and for the improvement of the next generation. To further such a process of selection, the social environment must meet the following conditions:

1. An adequate education for all. (Where there is little education, there is a high birth rate.)

2. Effective birth control available to all. (Where effective birth control methods are not made available, there is a high birth rate.)

3. An easy road to selective job placement. (Unless individuals find jobs for which they are naturally fitted, there can be no selection for diverse abilities.)

4. Finally, a balance of psychological, social and economic pressures and rewards which would tend towards larger families among abler stocks in every occupational group. (Such pressures and rewards are already evident in our society; they need only wider application.)

For a good many years we have been moving toward a form of society which meets these conditions for the white population. The results are evident in the trend to a reversal of educational and socioeconomic birth differentials which has been taking place among white people since the war. But we have moved slowly if at all to meet these conditions in our Negro population.

Inadequate Education

The Negro does not receive an adequate education; he is not provided birth control services; he is kept out of a variety of "white" jobs even when he is obviously fitted for them; for economic and other reasons he moves around less than his white neighbors and thus has fewer opportunities for assortative mating; and finally the balance of social pressures is such that the abler couples find less reason to have large families than do the corresponding whites.

As a result, the Negro population is now increasing faster than the white and socio-

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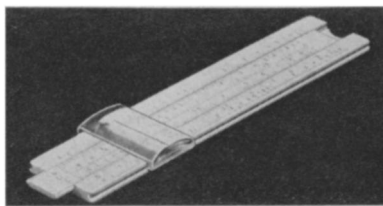
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economic birth differentials among Negroes are still dyagenic, as they were among whites 25 and more years ago.

Eugenics requires that the conditions necessary to an eugenically effective form of society be met for all people and races in the American melting pot.

We cannot afford for long to countenance environments in which job opportunities and education are not equally available, in which subservience is necessary for survival, or staying on relief is the only means of supporting one's children.

Negroes, because of their numbers, have more to contribute towards increasing the frequency of genes for ability than any other minority group. It is high time to provide conditions which will make this contribution possible.

Dr. Osborn is one of the leaders in the study of how biology, sociology and culture affect tomorrow's human population. He resigned his position as corporation executive in 1930 and became research associate in anthropology at the American Museum of Natural History, New York. Dr. Osborn was a general in charge of troop information and education during World War II.

• Science News Letter, 86:54 July 25, 1964

Nature Note

Big, Bad Hailstones

► THE AVERAGE hailstorm just taps on your window or the roof of your car for a while and then goes away. In Moradabad, India, however, a hailstorm in the spring of 1888 killed 230 people, and an additional 30 in surrounding areas. Many were wounded by the storm, which hurled lumps of ice "as large as cricket balls."

A decade later, a storm in Missouri killed hundreds of small animals, and chunks of ice went entirely through the roofs of houses. One house was stripped bare of its board siding on one wall. Another house, built of second-rate lumber, had all the knots in the boards beaten out, leaving walls full of holes.

Crops, especially, are subject to damage from hail. In the years from 1944 to 1953, Kansas suffered over \$100 million in losses, mostly in corn and wheat. On Aug. 18, 1925, one storm, in southeastern Iowa, caused over \$5 million in damage, forcing many farmers to abandon their homes and seek other employment.

Needless to say, all hailstones are not little pellets. One of the largest fell in Troy, N. Y., in April of 1949. It measured about five inches on a side and weighed four and a half pounds.

Finally, the worst hailstorm in recent years was perhaps the worst of all time. On June 23, 1951, a portion of Kansas from Sedgwick County to Allen County was inundated with a storm that cost \$14,340,000 worth of damage to crops, homes and other property. That is about \$7.55 for every man, woman and child in the state at that time.

• Science News Letter, 86:63 July 25, 1964

AERONAUTICS

Plastic Plane Takes Off From Streams or Roads

► A NEW ALL-PLASTIC airplane has been designed that can take off from narrow roads or even streams.

Designed for the U.S. Navy as a counter-insurgency (COIN) aircraft, the plane has less than two-thirds the wingspan of the smallest military plane now in use. Thus, it can be handled on aircraft carriers and freighters without the need for folding wings.

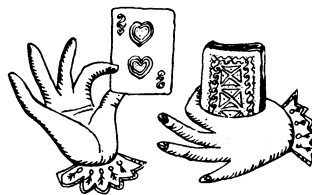
The amphibious craft is pushed, rather than pulled, by two propellers facing backwards from the tops of pylons mounted

above the wing. It has a top speed of 275 knots, but more importantly, it can takeoff in a mere 500 feet, clearing a 50-foot obstacle at the end, while carrying a 1,300-pound payload.

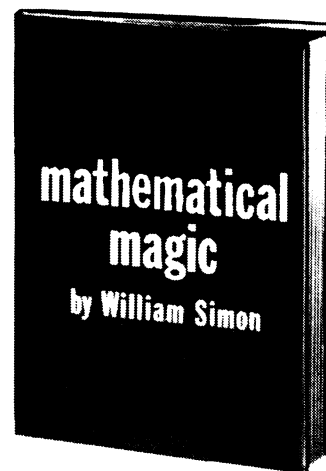
The overhead position of the propellers enables the underside of the wing to be used for any sort of armament or cargo. Tip tanks at the ends of the wing give the fiber glass reinforced plane great enough range to fly from California to Hawaii with a "sizable" payload.

The design for the plane was submitted to the Navy as a counter-proposal to several metal planes. It was developed by Goodyear Aerospace Corporation, Akron, Ohio.

• Science News Letter, 86:63 July 25, 1964



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