

Introduction

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This book will be almost entirely about human beings and the differences between them, and about human races and the differences between them. Let the reader understand at the start that we are interested in physical and genetic differences primarily, and only very indirectly in how people differ because of their culture and upbringing.

It is conventional to start with definitions of the terms to be used. We will not define a human being because each of our readers knows one of them with a special immediacy. *Race* has been considered a hard word to define, though it is probably no more so than many other commonly used words that refer to collections of events or objects. A race is: *a division of a species which differs from other divisions by the frequency with which certain hereditary traits appear among its members.* Among these traits are features of external appearance that make it possible to recognize members of different populations by visual inspection with greater or less accuracy. Members of such a division of a species share ancestry with one another to a greater

degree than they share it with individuals of other races. Finally, races are usually associated with particular geographic areas.

We have not said how large these divisions we call races are, or how many of them there are. This is a matter of choice, depending on how much detail is desired. Thus at one time we may speak of major races of continental scale, considering Europeans and their widely scattered relatives and descendants as a single unit. In another connection, we may distinguish various races *within* Europe. This is no more significant than turning the turret of a microscope to change the magnification.

It is important to realize that we can describe races only on the basis of differences between *populations*. The frequency with which a trait occurs in a population can be evaluated only if we have a statistical sample. A single individual is not a race, and no single individual will match in every respect the average of the population from which he comes; most individuals, in fact, are quite non-average in one way or another. If we try to make fine distinctions in describing differences between populations in different parts of Europe, for instance, we will find that the differences between populations are rather small, and are confusingly overlaid with a great deal of individual variation. In this case, certain individuals could not be identified with any particular area, and we might say of a man, "He could come from almost anywhere." However, if we had a *sample* of a number of individuals from the same area, we would be more confident about deciding where the population came from: and the larger the sample, the greater would be our confidence. We might say, "There couldn't be so many people who look like this anywhere but in Nation X." If we were to compare two very different population groups, such as Norwegians and Tanzanians, we might find an overlap in single traits, but not in the total appearance of any individual. Out of a thousand of each group, we could easily find a swarthy Norwegian whose skin color was similar to that of an unusually fair Tanzanian. And we could find a Norwegian with the kind of bushy hair that occurs sporadically among Europeans, and comes within the limits of variation of African blacks. But this hair form is not correlated with skin color in European populations, and it would be a one-in-a-hundred-thousand chance to find the two variants in the same individual. Still to be taken into account would be many differences in facial features between the two races. In this case we would probably not mistake our aberrant Norwegian for a Tanzanian, though we might reasonably guess that he was from any of a number of other places, and confess that he was an anthropological puzzle. Races, then, even quite distinct ones, cannot be clearly defined in terms of one or a few characteristics; they must be defined in terms of their normal combinations of characteristics.

The hereditary nature of the traits that are significant for distinguishing races is shown by the fact that when populations move from one part of the world to another, the descendants continue to resemble their ancestors. Some Americans look European, and

some look African, because their ancestors came from these regions many generations ago. If American-born descendants of Japanese are taller and heavier than their parents, we do not say that their racial characteristics have changed; we conclude that height and weight are only partly correlated with race because they are also affected by environment. Obviously there is a correlation between physical appearance and geographical area of residence or ancestry, but if there is a causal relation, it is not so simple or immediate that the children of Old World settlers in the New World grow up to look like American Indians. The nature of the relation between area and race will prove to be a very interesting one.

The importance of common ancestry in determining racial characteristics is also shown by intergradations between races wherever populations have been incompletely separated in the past. This effect, combined with the individual variation within groups, makes it impossible to set definite boundaries to races, in most cases. In a simpler and more innocent world, before people had moved about so much and had settled in territories far from their original homes, we might have made a leisurely trip away from home, in any direction, and observed a changing appearance of the people we saw, that would have given us a realistic view of racial differences. A few hundred miles away we might have noticed that certain variations we knew among the people of our own village—blond, brunet; tall, short; beaky nose or turned-up nose—were commoner or rarer than we were accustomed to. We might have seen a number of individuals who would look rather unusual back home. As we went further, we might begin to see individuals who looked like no one we had ever seen at home; and farther away still, we might find a population in which *nobody* looked like *anybody* back home. At what point in these travels could we say we had met a different race? We had observed an increasing racial difference from the population at our starting point, but where would we draw lines between races?

If we recognize as distinct races only populations so different that no individual of one of them could ever be mistaken for a member of the other, most of the people in the world would not belong to *any* of our races. Only when people whose ancestors originally came from widely separated areas have later been brought into contact with one another by travel or migration, do we have a situation in which clearly different elements in a single community (that is, elements with little or no overlap of physical appearance) can be defined as separate races. This is an abnormal, and largely a recent, phenomenon, that has given rise in some areas to attempts to define race in a legal way. However, if we look at races in their natural habitats, continuity is the rule rather than the exception.

How then can we define a particular race? The answer is that we cannot. We can try to define the word *race* itself, but individual races, like many other biological phenomena, can only be *described*. Some have said that for this reason we should not name races, although we can measure degrees of racial difference between

populations. It is quite likely, however, that we will continue to name races in the future, just as we name colors—though colors intergrade infinitely, and people often cannot agree on which word to apply to a particular hue. Other sciences have similar problems of terminology. Biologists give names to “biomes”—characteristic plant-animal associations of different areas—which intergrade everywhere at their boundaries. And a geographer speaks of “climates,” although a climate is only a statistical generalization derived from a tremendous variety of weather events that occur with different frequency in different areas. Yet it is meaningful to say that the climate of Colorado is colder than that of Florida, even though there are many days in each year when it gets warmer in Denver than it does in Jacksonville.

Sometimes races are grouped into “primary” races, which are unique or extreme in certain respects, and “secondary” races, which appear to be intermediate between neighboring populations. This is a relative matter, because nearly all populations have some distinctive features that cannot be explained in terms of a mixture between any of their neighbors. One indirect inference from this kind of classification is generally wrong: the notion that at some time in the past races were “purer,” that is, more distinct from one another and more uniform within themselves, than they now are. This may be true, to a degree, in some cases: for example, in Europe during the last few thousand years. In the Neolithic period, populations were smaller, there was probably more uninhabited territory between tribes, and regional differences may have been clearer at that time than they are now. But it is not safe to extrapolate this further backward. Alternating periods of migration and isolation have probably occurred throughout human history, with race formation (that is, accentuation of regional differences) at some times and places, and race mixture at other times and places.

One common misconception about race is that it is unique to man. On the contrary, nearly every widespread animal species has geographical varieties, just as the human species does. Visitors who have seen the semitame bears of the national parks of the western United States may wonder why this species is officially known as the “black” bear, when so many of the bears are some shade of brown. This is simply a racial difference. In the eastern race of this species, which the early European colonists first encountered and named, most bears were black. However, farther west, large numbers of lighter colored bears, including those of reddish hues, occur; and because the eastern race is largely extinct now, the name is not entirely appropriate. These color variants within the “black” bear population are reminiscent of hair color variation in man in another way: they appear in different *proportions* in different areas, and not only does a single local population of the species include individuals of different colors, but different shades of color may appear within a single family of mother and cubs.

Zoologists have given considerable attention to geographical variation in animal species. Sometimes they use the term *subspecies*

instead of *race*. This is largely a matter of terminology: the word *subspecies* has sometimes been used in reference to man. Intensive study of widespread species has shown that many characteristics, less obvious to casual observation than coat color, are equally diversified geographically. Measurements of the skull, which are individually variable but which also show average differences between collections from different areas, have often been studied, simply because the mammal collector usually brings the skull and the skin back to the museum and leaves the rest of the animal behind. Early anthropologists, studying skulls of different races of man, also found numerous regional differences. Recently, biochemical differences between races have been studied in many species, including man. Often, as we come to know more about various animals, we find that what we once considered separate species actually intergrade with one another, and are merely races. This shows that man's pattern of one species and many races is less distinctive than we once thought.

We may ask, "If a species which formerly had a restricted range spreads over a wide area, how long will it take for racial differences to develop?" The answer seems to be, "Not necessarily very long." In 1852, English sparrows were introduced to North America from England and Germany. Unafraid of man, and willing to live in closer proximity to man's activities than most other birds, they had a tremendous potential for expansion, and soon increased to millions, scattered over most of the continent. A careful study of sparrow populations at the present time shows a variety of regional differences, particularly in color but also in body size and proportions (Johnston and Selander, 1964). The color variations tend toward lighter and darker variations of the typical plumage in most cases, but in two populations, a distinct yellowish or rufous color appears on the under parts. As in man, individual differences in various traits overlie the regional differences, so that individual specimens, in many cases, cannot be definitely assigned to a particular region. But in the case of sparrows from Hawaii, not a single specimen from the island collection could be mistaken for one from the continent, or vice versa. We would call this a very marked racial difference. The period of time during which this amount of regional differentiation took place, from the introduction of the sparrows to North America until the date of collection of the specimens used in the study, was 111 years—a maximum of 111 generations for sparrows, and on the average, fewer, because many sparrows live to breed for more than one season. On the human scale, this would be about three thousand years—not a very long time in the history of our species.

Can we make a clear distinction between racial differences and species differences? Not *absolutely* clear, in all cases. Members of the same species must be able to interbreed and produce fertile offspring; this is essential in order to maintain the species as a genetic entity. If two groups do not so interbreed, they are considered distinct species. But there are instances where groups that *can*

interbreed do not normally do so, even though they are in frequent contact; mere differences in courtship behavior are sometimes responsible for this. Insofar as differences in culture, acting on either a conscious or unconscious level, have at some times and places discouraged mating between different races, we can say that the possibility has existed that human races might become species: but the possibility has never been realized. When related populations are long separated from one another, whether by physical barriers or otherwise, they eventually develop differences that make it impossible for them to interbreed. When this happens, what were once races have become species. This is an important process in evolution. But such a process seems to take a long time, and under present conditions of contact and interaction between different human races, there is no indication that it is likely ever to occur in man.

It is important to distinguish certain differences between human groups which, although they may *correlate* with race, are not the same thing. Sometimes the name of a nation is used as if it were a designation of race, as, the "Irish race" or the "German race." If the boundaries of these nations were quite permanent and well-sealed against immigration, the populations within them might in time come to be genetically meaningful units. However, national boundaries have often shifted in the past, and people have crossed boundaries, either in groups as invaders, or individually as immigrants; so there may be more difference, genetically, between different parts of a single nation than between adjacent parts of different nations. In the case of some large modern nations like the United States, extremely divergent races are present under a single flag. It is unwise, therefore, to use terms that confuse nationality with race. Languages do not define races either, though common language is sometimes evidence of common ancestry, and may be a guide to understanding the history of population movements and racial affinities. Language differences also inhibit communication and may thus discourage intermarriage. But languages can be imposed on groups by political means: the "Latin languages" of Europe do not define a "Latin" race; these languages are relicts of the Roman Empire, which, at its greatest extent, included a rather diverse lot of people. And in some areas, languages that are not detectably related may be spoken by peoples whose physical type is quite similar, as among the Plains Indian tribes of North America. Nor does religion define race, though in some areas there may, for historical reasons, be racial differences between adherents of different religions. And race is not culture, though different racial groups in an area may have cultures that are different to a greater or less degree. Many dubious statements have been made in the past about causal relations between race and culture. If we define race in genetic terms, the only meaningful relation between race and culture would be one that was the result of inherited differences in temperament and aptitude, which determined to some extent the various modes of thought and action of various populations.

Whether such relations exist is an interesting question, but one that is extremely difficult to answer, at least at the present time. The learned patterns of behavior that we call culture represent adaptations of groups to particular environments; because culture is largely ruled by tradition, it is sometimes an adaptation to an environment that no longer exists in its original form. And because environment in the full sense of the word is not the same for different social classes in the same community, it is not surprising that differences in culture between races may persist for a long time after the races have come in contact with one another. Thus, it is easy to believe that behavioral differences are genetic in origin, as are physical differences. But we need to know much more about the ways in which behavior patterns develop in groups and in individuals before we can speak with assurance about any genetic factors in human behavior.

What do we mean by a *racial trait*, or *racial characteristic*? Without exception, traits that are found to differ in frequency of occurrence or degree of development between races are also found to differ among individuals within races. However, a trait that differed between individuals but in no way correlated with geographical area would obviously be of no interest in describing races. If all populations all over the world had the same average stature, stature would not be a racial trait at all. If it could be shown that stature variations between populations were entirely the result of nutrition or other extrinsic factors, we would consider stature not to be a racial trait on grounds of lack of *hereditary* difference between races. However, stature *is* a racial trait, although the amount of racial variation compared to individual variation is not very large in this case. Hair form is more clearly diagnostic of race, because one variety, the wooly type, is nearly universal in some parts of the world and very rare in others. Thus, there are degrees to which various sorts of variation may be spoken of as "racial" traits. Yet, surprisingly, just as there are virtually no variations in man that are *totally* "racial," so there is virtually none that is not at least *slightly* "racial" in the sense that some average differences can be detected between populations of different areas.

It will be clear from what we have said so far that there is no single characteristic that is shared by all individuals of one race and denied to everyone else. Still less is there any single simple quality, which one race possesses and another does not, that bestows a "package deal" of physical and behavioral traits on some people and not on others. This is a disappointment to those who wish the world were simple.