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ANTHROPOLOGY AND HUMAN GROWTH

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There is nothing new about the study of man by man. Man has been observing and commenting about himself for a very long time. In fact, we may suspect that even the earliest torch-bearers of man's progress had an interest in their fellow-creatures—a gastronomical interest. One of man's first discoveries about man probably was that he is edible.

Some epochs later, when dietary habits changed, to be replaced by other equally fascinating and destructive fashions, man's interest in himself had not abated. Still, even among non-predatory anthropologists, the chief motif usually was man as a palaeontological curiosity, man as a racial specimen, man in the mass—seldom the study of man as an individually developing organism.

It was not until well into this century that any considerable body of anthropologists tore themselves away from the absorbing study of defunct individuals, and became aware of the living laboratory awaiting them in the growing human body. In this movement, the names of Franz Boas and C. B. Davenport are outstanding.

A dawning realization that the human child is not merely a little man, but an organism possessing peculiar problems and challenges, turned the attention of many other disciplines to the growing human being as an individual object of study. Such a trend may be seen early, for instance, in the establishment of pediatrics as a separate medical specialty, and in the increasing interest of psychology in problems of child development. Many such fields came into the orbit of human growth as full-blown disciplines, intent upon their own problems, and employing children as subjects only insofar as they were suitable to the study at hand. These fields often remained to study human growth and development as a discipline in its own right.

And in the report of the anthropology section of the A. A. A. S. at its 1931 meeting, human growth may be considered, so to speak, to have come of age:

"In the realm of physical anthropology emphasis centered very largely around the question of growth. . . . Indeed, the sessions devoted to this subject left a rather definite impression that we may be at the beginning of a new era, in which the individual, rather than mass studies, will be foremost. The importance of observing the same individual over the largest possible period was emphasized by nearly every speaker who dealt with any aspect of development."

In the course of this evolution, research has thus tended to shift its interest from the study of a few variables in large samples of humans, at one period of time,

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to the study of many variables in relatively small samples of humans, over long periods of time. In other words, anthropology has become aware of the ontogenetic aspects of the story of man, and aware also that the observation and analysis of human growth present valid anthropological problems (1-4).

The study of human growth gives rise to problems which have an existence within themselves, and call for methods of analysis which are distinctive (5-9). This situation arises in part from the fact that man himself is in many respects a unique animal.

Man has certain structures and physical abilities which, though not unique in a broad biologic sense, are nevertheless at the extremes of a continuum. For example, one easily thinks of brain size, habitual upright posture, language, tool-using hands. Together with these, man has certain growth patterns of infancy and adolescence, and a life-span extending well beyond the reproductive necessities of the species, which make for unusual person-to-person associations. In addition, man has certain environmental relationships which are not completely duplicated by the rest of the biologic world.

These environmental relationships have been penetratingly discussed by Frank (10), who distinguishes four types: geographical, internal, the cultural environment of group life, and the social environment of group living. Human beings operate within these environments, responding in terms of their own "private worlds," through their own inherited physical makeup.

In this inter-relation of behavior to biological characteristics, man is essentially unique, and must be studied by methods particularly suited to his own uniqueness. We must, as Romanell (11) says, find some kind of an explanation of evolution that will fit all the facts of life, and yet make intelligible the difference between the life of man and the rest of living things. Human conduct is not always rational, but there may be a rational interpretation for its irrationality. Greff, director of medical sciences of the Rockefeller Foundation, says "some new organizations of researchers must be evolved to carry on those studies of human phenomena which require years to complete. We have had a foretaste of such studies in the researches on child growth and development. In this field the tendency has been steadily to extend the period under which the individuals are under study."

Since 1929, the Fels Research Institute for the Study of Human Development, at Antioch College, has been engaged in just such a study as Dr. Greff has asked for. The Institute is engaged in what may be called a longitudinal, multidimensional, integrative study of a relatively small sample of the human population. The growth, development and social adjustment of some 300 children, together with their families, are being followed from fetal life through maturity. The complexity of such a study makes it necessary, of course, that many disciplines contribute their skills, and the present personnel includes representatives from anatomy, anthropology, biochemistry, genetics, medicine, physiology and psychology (12).

The general program involves an extensive battery of observations, measurements and tests, within the above-mentioned areas, at repeated intervals, through the life-span. Within the physical growth department, the collection of data and the core of research are centered around changes in body structure, growth progress and health. Thus, techniques and investigations in this department draw heavily upon the disciplines of physical anthropology and medicine. The staff of the physical growth department includes a pediatrician, a physical anthropologist, a specialist in the growth of teeth and jaw, and various assistants trained in x-ray and medical techniques, anthropometry and nutrition analysis. The point of view of the department is strongly longitudinal; that is, analyses are based on repeated measurements and observations of the same individuals during the entire period of growth.

The longitudinal method of studying the development of human beings possesses both advantages and disadvantages (13). A full discussion of these factors is beyond the scope of the present paper. However, it is safe to say that, with the materials we have examined to date, longitudinal data appear to give much superior information on growth trends for every physical, physiological, mental and social factor which we have been able to measure or assay.

The longitudinal method of studying human development has been cited as the outstandingly important item in predictions of trends of research in the second half of the twentieth century. The manipulation of research in this complex area is a procedure in which the anthropologist is truly a key man. Within this area, research in physical growth is a vital part in man's search for greater knowledge of himself.

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