

FORENSIC ANTHROPOLOGY AND THE CONCEPT OF RACE: IF RACES DON'T EXIST, WHY ARE FORENSIC ANTHROPOLOGISTS SO GOOD AT IDENTIFYING THEM?

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Abstract—Most anthropologists have abandoned the concept of race as a research tool and as a valid representation of human biological diversity. Yet, race identification continues to be one of the central foci of forensic anthropological casework and research. It is maintained in this paper that the successful assignment of race to a skeletal specimen is not a vindication of the race concept, but rather a prediction that an individual, while alive was assigned to a particular socially constructed 'racial' category. A specimen may display features that point to African ancestry. In this country that person is likely to have been labeled Black regardless of whether or not such a race actually exists in nature.

Key words—forensic anthropology, race, race identification, human variation

Several years ago, I was approached by the Michigan State Police for assistance with the identification of a set of decomposed human remains. The specimen, obviously human, was discovered in a wooded area by hunters, reported to police and transported to a morgue at a local hospital. After a standard anthropological evaluation of the material I concluded that the remains represented a Black female, who was 18-23 years old at death and between 5'2" and 5'6". The condition of the remains suggested that deposition occurred between 6 weeks and 6 months before discovery. That information was reported to the Investigative Resources Division of the State Police who matched it against Missing person records. In a few weeks time the remains were positively identified as representing a Black female, who was 5'3" tall and 19 years of age when she disappeared about 3 months earlier.

For many anthropologists there currently exists a dilemma. While most have rejected the traditional Western notion of race, as bounded, identifiable biological groups and have renounced its use as harmful, the race concept as it is understood by the public continues to be one of the central foci of forensic anthropological research and application. Does the fact that forensic anthropologists are able to correctly guess the race of a subject from skeletal remains in any way validate the concept?

THE NON-EXISTENCE OF RACES

In the 1960s, C. Loring Brace and Frank Livingstone presented arguments for the nonexistence of human races [1, 2]. Extending a debate that began a decade earlier in zoology [1, 3], they argued that the discordance of traits made defining races on the basis

of more than one or two characters impossible. Since no human biologist would support such limited criteria for defining a race, the race concept was deemed untenable for human populations.

Brace and Livingstone reiterated and elaborated on their positions in Montagu's *The Concept of Race* [4], a volume that also included contributions by, among others, Montagu, Hiernaux, Hogben, Erlich and Washburn. After applying a cluster analysis of traits to a series of African populations, Hiernaux reached a conclusion that echoed the sentiments of the other contributors to the volume:

From whatever viewpoint one approaches the question of the applicability of the concept of race to mankind, the modalities of human variability appear so far from those required for a coherent classification that the concept must be considered as of very limited use. . . . [T]o dismember mankind into races as a convenient approximation requires such a distortion of the facts that any usefulness disappears [5].

The non-race position was not immediately embraced by the anthropology community. In fact the papers by Brace and Livingstone and the volume by Montagu were only part of a sometimes bitter controversy waged largely in the pages of *Current Anthropology* during the 1960s [1, 2, 4, 6-10]. In a volume of collected papers from a 1966 AAAS symposium on science and the concept of race, the eminent geneticist Dobzhansky voiced an opposing view with his well known quote. "If races did not exist they would have to be invented. Since they do exist they need not be invented, they need be understood" [11].

It is difficult to evaluate the effect that these debates particularly of the non-race position have had on today's physical anthropologists. Was it insignificant? In a recent review of the history of the race concept

in American physical anthropology, Brace himself writes,

... the assumption that contemporary human variation can be understood in terms of 'racial' variation, despite some pointed critiques, ... sails on without any substantial change from the time when Hrdlicka and Hooten were shaping the field into its subsequently recognizable form [12].

That the non-race arguments made a significant impact, however, is revealed by the recent work of Littlefield, Lieberman and Reynolds who maintain the non-race view is quite alive and well among physical anthropologists and may even represent the 'modal position' [13]. Their research has evaluated the positions with respect to the existence of race taken in 58 physical anthropology (including human evolution) textbooks written between 1944 and 1979. Of the 42 texts that commit to the question, 17 take a 'races do not exist' position. But, more importantly, they state:

Although the no-race view was rarely expressed in physical anthropology texts before 1970, it had become *the most frequent view* by 1975-79, with only one quarter of the textbooks continuing to argue for the validity of the race concept [13, p. 646] (emphasis mine).

In a paper delivered at the 1987 American Anthropological Association meetings in Chicago, Lieberman and his colleagues reported that only about 50% of 147 physical anthropologists surveyed in the United States agreed with the statement that "There are biological races within the species *Homo sapiens*." They also pointed out that among cultural anthropologists, only about 29% agreed with the races exist position [14].

The debate that followed the 1960s papers by Brace and Livingstone and the Montague volume and Brace's 1982 lament notwithstanding, these studies by Lieberman, Littlefield, and their coworkers and my own reading of current literature indicate that most anthropologists have rejected the notion of races for human populations. Certainly, very few of today's anthropologists explicitly support the traditional view of human populations being divisible into four or five major races.

FORENSIC ANTHROPOLOGY AND THE USE OF RACE

Forensic anthropology, the application of the physical anthropologists' techniques of human skeletal analysis to law enforcement issues, is a young but growing area of research and applied anthropology. The physical anthropology section of the American Academy of Forensic Sciences currently lists about 50 active members in U.S. and Canada, Europe and Asia. Each year hundreds of instances occur in the U.S. alone where anthropologists are called upon to provide expertise to police agencies, medical examiners and attorneys, and many of us testify in courts of law on a regular basis. Cases involving forensic anthropology often receive a great deal of media

attention, making it one of the more visible of our subdisciplines.

Forensic anthropologists are regularly presented with material ranging from bits of bone, the species of which a medical examiner or coroner is unable to identify, to whole, obviously human skeletons in various stages of decomposition. If human material is believed to be modern (i.e. died within the last 10 or 20 years), the goal is usually to discover the person's identity. Identification is a two stage process. The first stage involves the construction of a biological profile and the second is an attempt at a positive match. The latter ideally involves comparing some individualizing data from a missing person to similar data recovered from the skeletal remains, such as dental records or X-rays. The purpose of the first stage is to generate a list of missing persons who generally fit the description of the unknown specimen. This stage is necessary to create a manageable sample by narrowing down the field of possible victims whose records may be searched for appropriate identifying data. The construction of a biological profile customarily involves traditional anthropological techniques and data. The categories typically involved are age, sex, stature and race. A typical report to the medical examiner might include, among other information, the following:

Sex: Female
Age: 18-23 years
Height: 5'2"-5'6"
Race: White (Caucasian)

The assessment of these categories is based upon copious amounts of research on the relationship between biological characteristics of the living and their skeletons. The Hamman-Todd Collection, housed at the Cleveland Museum, and the Terry Collection, now at the Smithsonian Institution, have provided the bulk of the data. These are both cadaver samples that were collected in the first quarter of the 19th century, unique because the data available for most of the specimens includes, age, sex, living height and weight, race, and cause of death. Such data allowed Trotter and Gleser [15, 16], for example, to derive formulae for estimating stature from long bones, and numerous authors to develop and test methods for evaluating age at death and sex [17].

Many of the studies that laid the foundations for race identification from skeletal remains in the U.S. relied on either the Hamman-Todd or the Terry Collection. In 1962, Giles and Elliot published a new discriminant function method for determining race [18]. They used the Terry collection to obtain skulls of 'Blacks' and 'Whites' and the Indian Knoll, Kentucky, sample for American Indians. Their technique involves manipulating eight measurements of the skull with a discriminant function formula that yields a single quantitative value. The process requires two dichotomous tests, one to distinguish between Blacks and Whites and another for

American Indians and Whites. In both tests, race is indicated by whether or not a specimen's score falls above or below a predetermined sectioning point value. Recently Jantz and Moore-Jansen published an improved set of measurements and functions based upon the University of Tennessee Forensic Anthropology Data Base [19]. Howells [20] contributed an alternative multivariate test which is more accurate than that of Giles and Elliot or Jantz and Moore-Jansen, but is much more difficult to apply. It requires twenty length measurements and six angles and four special types of calipers [17].

Following Giles and Elliot and Howells, Gill [21], recently proposed several midface measurements that distinguish between 'Whites' and 'American Indians'. A number of other authors [22-27], have provided data and formulae for racial determination from the postcranial skeleton. Similar to the methods that apply to the cranium, these all involve submitting a series of measurements to an algorithm and basing judgements about race upon a derived value relative to some previously determined sectioning point.

Forensic anthropology texts also describe non-metric or anthroposcopic methods of race determination. According to Krogman and Iscan [25, p. 272], for example,

The more typically Negroid has undulating supraorbital ridges, sharp upper orbital margins, a rounded glabella, a plain frontonasal junction, and a wide interorbital distance ... White skulls have mesa-like supraorbital ridges, blunt upper orbital margins, a depressed glabella, 'beetling' of the frontonasal junction and a narrow interorbital distance.

Dental observations have also received attention, particularly the association of shovel shaped incisors among Asiatics and Native North Americans [28, 17].

How accurate are the estimates that result from these methods? According to Krogman and Iscan's recent text [25, p. 296], race should be determinable from skull morphology in 85 to 90% of cases. In 1979, Snow *et al.* [29], reported that the races of 83% of a sample of known white and black crania were accurately assessed with the Giles and Elliot technique, but that the method worked poorly (1 out of 7 correct) for American Indian remains. That race is determinable from the skull and postcranium is taken for granted among forensic anthropologists. If such a determination is not possible, the problem is usually attributed to the incomplete nature of the remains or mixed ancestry.

DISCUSSION

Physical anthropologists have a problem. While arguably the majority of us feel that human biological races do not exist, the assignment of a race to a set of skeletal remains is a routine part of most forensic anthropology evaluations. This problem is especially profound for those of us who feel that debunking the idea that human biological variation naturally divides

itself into three major groups is an important role for modern anthropology.

Perhaps if the racial identification practiced by forensic anthropologists reflected some new sophisticated treatment of gene frequencies more enlightened than the centuries old popular notion with which we are all familiar. But modern race identification studies in forensic anthropology invariably involve some combination of the Big Three, Black, White and Asiatic (including American Indian). Three recent forensic anthropology texts underscore the point:

In many cases there is little doubt that an individual belonged to the Negro, Caucasian, or Mongoloid racial stock [30].

Thus the forensic anthropologist uses the term race in the very broad sense to differentiate what are commonly known as white, black and yellow racial stocks [31].

In estimating race forensically, we prefer to determine if the skeleton is Negroid or non-Negroid. If findings favor non-Negroid, then further study is necessary in order to rule out Mongoloid [32].

Each of these books and others [17, 33, for example], and numerous articles take essentially the same position: it is usually possible using morphometric and morphoscopic criteria to assign an unidentified specimen to one of three or four races.

Does the accuracy with which forensic anthropologists are able to determine whether an individual is White, Black or Native American from skeletal remains obviate the race/non-race debate? Is the practice a validation of the traditional race concept? My position in this paper is that race identification by forensic anthropologists has little to do with whether or not biological races exist. The race controversy in anthropology is a debate about natural groupings of human biological diversity, a question of taxonomy. Forensic anthropologists, when they assign a race label to a skeleton, are involved in a process that uses a narrowly defined set of biological variables for a very specific end, that is, to construct a biological profile that will match a missing person report.

That the view of human races employed in forensic anthropology is a non-scientifically established version of the Big Three is illustrative. To be of value the race categories used by forensic anthropologists must reflect the everyday usage of the society with which they interact. In ascribing a race name to a set of skeletonized remains, the anthropologist is actually translating information about biological traits to a culturally constructed labelling system that was likely to have been applied to a missing person. In North America, for example, people who display certain skeletal features are likely to have been called Black. And since the goal in forensic identification cases is to find agreement between the biological profile generated from a skeleton to a missing person report,

it only makes sense to use the emic categories that are likely to have been used to describe the missing person.

The options available for such labeling may be limited to the categories listed on missing person forms. For example, the National Crime Information Center, a centralized data bank for missing persons and unidentified remains, provides five options.

Asian (or Pacific Islander)
Black
American Indian (or Alaskan Native)
White
Unknown

The forensic anthropologist's task is to predict which, if any, of these options will correspond to the set of bones they are evaluating. Whether these are cultural, sociological or biological categories is irrelevant. Forensic anthropologists may be very good at matching a set of remains to the race label ascribed to a missing person, but the practice has little if anything to do with the taxonomic questions about the natural existence of races.

Some of the confusion about this issue may stem from an assumption that to identify a specimen as having ancestors in Africa or Europe, for example, is tantamount to race identification and a verification of geographic races. No one who argues against the race concept denies that human variation exists or claims that this variation is not systematic. In fact, it is systematic variation that allows anyone to estimate, with varying degrees of specificity, a person's place of ancestry from their physical features. However, to identify a person as having ancestors from, say, Northern Europe does not identify a biological race of Northern Europeans.

Is this distinction important? Many anthropologists who support a non-race interpretation of human variation, feel strongly that the dissemination of the perspective is an important role for anthropology. In fact, at the 1987 Meetings of the American Anthropological Association a symposium entitled *Human Variation: Informing the Public*, was devoted to just that topic. As evidenced by the participants and audience at that session, many anthropologists have incorporated the non-race perspective into their classes. The fact that forensic anthropology cases often receive a great deal of publicity exacerbates matters because anthropologists become the authorities who substantiate the public view that there are three races of humankind. Furthermore, our work with law enforcement officials promotes a communication channel with personnel who might benefit professionally from exposure to the notion that perceived races are not reflections of biological reality. But we "sail on" as though the question of races was never an issue in anthropology.

CONCLUSION

Most anthropologists have rejected the concept of race for human populations both as a research tool and as a valid representation of biological diversity. Yet, forensic anthropologists typically include a races label (Black, White, Mongoloid or Native American) along with age, sex, and height in their descriptions of unidentified remains. My contention here is that such a practice is not a vindication of the traditional notion that there are four major human races, rather, it is a prediction, based upon skeletal morphology, that a particular label would have been assigned to an individual when that individual was alive. When there is agreement (which there often is) between the predicted race label and that which appears on a missing person report, the likelihood of identification is improved.

That forensic anthropologists place our field's stamp of approval on the traditional and unscientific concept of race each time we make such a judgement is a problem for which I see no easy solution. Perhaps we could avoid the term "race" in our communications about cases, substituting 'ancestry' or some other word that has less baggage than race. Perhaps we could be more explicit about the social or cultural concepts of race. Certainly we can teach the non-existence of race in the classroom and do our best to clarify the use of races in forensic anthropology. At least, however, let us not fall into the trap of accepting races as valid biologically discrete categories because we use them so often.

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