

Towards a More Critical Biomedical Anthropology

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Beginning with the basic observation that medical anthropology is primarily identified as a sociocultural anthropological subdiscipline, Johnston and Low (1984) define a new topical area, "biomedical anthropology," that combines "theoretical and methodological aspects of physical anthropology and medical anthropology" in the study of disease and health in human populations. A definition of biomedical anthropology vis-a-vis medical anthropology is easily derived given the divergent research concerns of the two fields. However, an even more profound difference exists between them: medical anthropologists often question the primacy of positivist and other scientific ways of knowing, while biomedical anthropologists, by definition, cannot. The real problem in establishing and defining an autonomous biomedical anthropology lies not in separating it from medical anthropology but from traditional medical science. Medicine and physical anthropology share a long history. The development of an avowedly critical biomedical anthropology would serve to establish the autonomy of the field within the medical sciences, and by offering a positivist alternative interpretation of common medical practice, could help improve the health and well-being of the general population.

INTRODUCTION: BIOMEDICAL ANTHROPOLOGY AND MEDICAL ANTHROPOLOGY

In 1984, Johnston and Low defined a topical area, "biomedical anthropology," as a typically holistic, anthropological subdiscipline, combining "theoretical and methodological aspects of physical anthropology and medical anthropology" in the study of disease and health in human populations. They cited Greene's work on goiter in high altitude populations in Ecuador (e.g., Greene 1973, 1974), Gajdusek and Blumberg's Nobel Prize-winning investigation of the slow virus-induced disease kuru (see Gajdusek 1977), and Livingstone's pioneer analysis of sickle-cell disease in West Africa (Livingstone 1958) as prime examples of biomedical anthropological studies. Other examples could include Katz's studies of G6PD deficiency and fava bean consumption in the Mediterranean region (Katz and Schall 1979), McKenna's anthropological analysis of sudden infant death syndrome (McKenna 1986), and our own work on the evolution and cross-cultural distribution of schizophrenia (Allen *et al.* 1990; Allen and Sarich 1988).

Johnston and Low stressed that their biomedical anthropology is an integrative field requiring "significant and sophisticated contributions from both the biological and cultural" (1984:225). In their view, the necessity of defining another sub-subdiscipline in anthropology was dictated by the reality that medical anthropology is, for the most part, primarily identified with or as cultural anthropology. It should be noted that this need is not perceived by all:

Browner *et al.* (1988) suggested a biocultural methodology for medical anthropology without drawing disciplinary boundaries. Nonetheless, Johnston and Low's point is well-taken, and the term "biomedical anthropology" is useful for defining an area or method of investigation within general, medical and physical anthropology.

In their review of medical anthropology (vis-a-vis biomedical anthropology), Johnston and Low (1984) emphasized that medical anthropologists are concerned with sociocultural aspects of health and illness. They did not point out, however, that the very existence of a culture-oriented medical anthropology forms a challenge to researchers and clinicians in medical science, and that in many cases, medical anthropologists maintain a critical and at times adversarial relationship with the "Western medical establishment". This conflict is ultimately rooted in a disagreement concerning the "mode of production of medical knowledge" (Young 1978), a disagreement exemplified by the rejection by some medical anthropologists of "positivist" (i.e., progressively scientific) ways of knowing. Medical anthropology is different from medicine -- and from biomedical anthropology -- because medical anthropologists "reject the crude Cartesianism of the biomedical model of sickness" (Young 1982:266) and do not "fall prey to the biological fallacy and related assumptions paradigmatic to biomedicine" (Scheper-Hughes and Lock 1987:6). Indeed, much of the power of medical anthropological analyses derives not simply from a concern with the sociocultural aspects of health and disease, but from a willingness to question the primacy of

"Western science" as a means of understanding and combating human illness.

Biomedical anthropologists cannot reject the "biological fallacy". In fact, the autonomy of biomedical anthropology within medical anthropology depends upon its embrace of positivism and "biological logic". However, while it may be clear that biomedical anthropology is different from medical anthropology, it is not so clear that it is different from medicine. For almost 100 years, concerned investigators have looked at ways of introducing some of the results and methods of physical anthropology into the medical community. This effort, from the perspective of establishing an autonomous health science discipline, has been a total failure. Medical science generally rejects evolutionary findings as being too remote from the doctor-patient relationship to be of any great use, and absorbs, with little impact on the typological disease model of illness, the existence and implications of human variation. Biomedical anthropologists have produced valuable results; however, these results have not necessarily contributed to the establishment of an independent and recognized field of study. I believe that if biomedical anthropology is to become an autonomous field, it must expand its research concerns and methodological outlook to encompass an avowedly critical and adversarial perspective: it should become more like medical anthropology. By offering a positivist alternative viewpoint to that provided by medical science, biomedical anthropology will not only increase the likelihood that it will be recognized as an independent research field, but it will also make important contributions to the health and well-being of the general population.

HISTORY: PHYSICAL ANTHROPOLOGY AND MEDICINE

This paper is too short to review the entire history of physical anthropology, but I will mention that its history is one filled with medical men and institutions. However, it is not correct to say that physical anthropology evolved out of medicine; rather, both modern medicine and physical anthropology emerged from the more naturalistic and scientific study of anatomy that appeared during the Renaissance. By the end of the 19th century, physical anthropology was beginning to be recognized as an academic discipline, and scientific (allopathic) medicine was asserting its dominance over other medical sects.

Havelock Ellis, who later achieved fame as a pioneer in British sex research, was one of the earliest to look at the use of anthropological

knowledge in medicine (Ellis 1892). He began by noting that the vast majority of prominent 19th century anthropologists were trained in medicine, and that such an involvement was not reflected in the English medical curriculum. He believed that anthropological insights were most valuable in two areas: "practice abroad and asylum practice". Race was obviously an issue in the British Empire; anthropology was important in modern psychiatry as a result of pioneering work in neurology done by anthropologists (especially in France). Ellis bemoaned the lack of an active field of criminal anthropology in England, where English psychiatrists "were content to leave the first tentative efforts to a prison chaplain" (1892: 366). He acknowledged that the medical student was perhaps already overburdened with coursework, but suggested that anthropology be inserted into the medical curriculum in place of botany, a science of decreasing medical relevance given that the physician was no longer responsible for producing his own pharmacopoeia. Ellis's views are interesting, but there is no indication that they had any influence.

Earnest Hooton, the pioneer American physical anthropologist, also examined "the relationship of physical anthropology to medical science" (Hooton 1916). His approach was similar to Ellis's: he began by noting the historical contributions of physicians to physical anthropology, and he decried the fact that modern American physicians no longer made such contributions. In terms of applying "theoretical physical anthropology" to medicine, Hooton stated that a scientific knowledge of the human body is incomplete without some knowledge of its evolutionary history. In particular, he said that physicians should be cognizant of the morphological and physiological changes imposed upon the body by the assumption of erect posture: "The erect posture is responsible for man's liability to hernia" (1916:261). He also discussed the possible importance of vestigial organs and atavisms, both of which are most explicable in evolutionary terms.

Hooton went on to review the potential contributions to medical science of the "practical ends of physical anthropology". He pointed out that physicians in general, and orthopedic surgeons in particular, should pay more attention to the science of osteology and to the range of normal variation, both qualitative and quantitative, found in the human skeleton. He stressed the importance of "Racial Anatomy" in the study of disease susceptibility; the United States, he said, was a natural laboratory for the study of race. He called for more studies of the American Negro, with particular attention given to adaptations that may

have arisen in response to the change from a tropical to a temperate environment. Although he criticized the quality of the work of the criminal anthropologist Lombroso, Hooton said that there was still much to be gained from a wide application of anthropometric techniques. Finally, he warned physicians to temper their enthusiasm for the "so-called eugenic movements", pointing out how little was really known about human heredity.

Ales Hrdlicka, "America's first full-time professional physical anthropologist" (at the U.S. National Museum, Spencer 1979), also looked at the relationship between anthropology and medicine (Hrdlicka 1927). He believed that:

The bearing of anthropological knowledge on different branches of Medicine is so intimate and important that a first-class medical education today without the anthropological aspect of things must necessarily be incomplete and constitute a serious handicap to the graduate, which he may never be able to overcome (1927:1).

Hrdlicka was originally trained as a physician at a sectarian (eclectic) medical school in New York City. Like Ellis and Hooton, he was well aware that in the past, training in physical anthropology usually meant training in medicine. In his 1927 article, which was based on lectures given to medical students, Hrdlicka emphasized that anthropologists were interested in learning about "physical man" in the hopes of "furthering future human development", while medicine was interested in curing ills that proved to be obstacles to this development: "Anthropology is helping light, Medicine to clear, the road of eugenic, further human evolution" (Hrdlicka 1927:3). Eugenics was not one of Hrdlicka's primary concerns (see the bibliography in Spencer 1979; Kevles 1985), but perhaps it was a concern of his audience. He stressed the importance of individual and group (racial) variation in understanding how disease may differently affect different people. He noted that recent evolutionary changes in diet, brain size and especially locomotion have implications in the current maintenance of health. Hrdlicka also reviewed paleopathology and pointed out that some diseases then common (c.g., syphilis, tuberculosis) were not present in populations in the past. He concluded:

Man is by no means the same man physically or chemically in the different races and different parts of the world, and the slowly increasing anthropolo-

gical understanding of these differences cannot but be of direct concern and usefulness to Medicine (1927:9).

W. Montague Cobb (1956), writing just before the great expansion in academic physical anthropology in the late 1950's and 1960's, noted that physical anthropologists were becoming increasingly removed from their medical roots and from medical training. Cobb was a physical anthropologist who taught at a medical school (Howard); he was aware firsthand that there were "certain difficulties" in convincing the "doubting Thomases" among the medical faculty of the importance of anthropology in medical education or practice. These difficulties included the increasing competition from new medical advances, for which a place had to be made in the medical curriculum, and the fact that anthropological insights were not perceived to be of much use in clinical settings. Cobb noted that physical anthropologists who had served as anatomists in medical schools were often, upon their retirements, replaced by individuals with very different interests. He was unhappy that medical schools were only rarely the training grounds for physical anthropologists.

This historical discussion is not intended to be comprehensive but is provided simply to illustrate that physical anthropologists have, for some time, attempted to make physicians pay attention to anthropological findings when they are dealing with their patients or forming clinical policy. It is apparent that some of the medical potential ascribed to physical anthropology by the authors of these older articles (the most recent was 1956) has been fulfilled (although not necessarily in ways they would have predicted); so much so in fact that Johnston and Low, in 1984, chose to describe a new anthropological subdiscipline, biomedical anthropology.

CONCLUSION: A CRITICAL BIOMEDICAL ANTHROPOLOGY

As mentioned above, the autonomy of biomedical anthropology within medical anthropology is much more easily demonstrated than the autonomy of the field within medical science in general. If biomedical anthropologists receive funding from medical granting agencies, examine patients and subjects in hospitals controlled by physicians, work in medical schools, receive training primarily as physicians or medical research scientists, and perhaps most importantly, subscribe to similar scientific world views and ways of knowing, then the difference between

biomedical anthropology and traditional medical science becomes a semantic one. Obviously, there are issues of medical importance that have been profitably studied from a legitimate bio-anthropological perspective; however, many of these issues must be perceived as somewhat esoteric and academic by the medical mainstream. Although the quest for relevance can be over-emphasized, biomedical anthropologists should remember that medical science is the most applied of the applied sciences.

One way for biomedical anthropology to establish its independence from medicine is to become more like medical anthropology and maintain an explicitly critical relationship with the medical mainstream. A critical attitude has existed previously, but it was often implicit and informed by the essentially extra-medical concerns of ethnicity, variation and evolution. Biomedical anthropologists, trained in a non-medical, positivist tradition, can expand their research base by undertaking projects that review and evaluate current medical practices. Opportunities exist in several areas, including elective and plastic surgery, psychopharmacology, orthodontics and oral surgery, and obstetrics. The public can only benefit (and should be made aware of the potential benefits) from a more pluralistic, biological view of the maintenance of their health.

In a very different context, Scheper-Hughes and Lock (1987) call upon medical anthropologists to "problematize the body". This is a message that biomedical anthropologists should heed as well. Workers in public health have for decades provided a biologically-based alternative to medical knowledge and opinion in the treatment and prevention of illness at the social and populational levels. Such a biological alternative is lacking at the level of the body. Biomedical anthropologists are in a position to provide such a critical perspective. Combined with their traditional concerns for biocultural and evolutionary issues, they can make that perspective both useful in maintaining the health and welfare of the general public and true to the historically important issues of physical anthropology.

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