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MEDICAL ANTHROPOLOGY AND EPIDEMIOLOGY: DIVERGENCES OR CONVERGENCES?

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Abstract—Despite recent calls for greater collaboration between medical anthropologists and epidemiologists, examples of synthetic, interdisciplinary anthropological–epidemiological research are frankly rare, due in large part to perceptions among medical anthropologists that anthropology and epidemiology diverge considerably in their topics of inquiry, epistemological assumptions, methods of data collection and notions of risk and responsibility for illness. In this article, five of these perceived areas of divergence are examined, with an attempt to reconceptualize them as areas of potential convergence.

Key words—medical anthropology, epidemiology, positivism, methodology, risk

INTRODUCTION

In recent years, anthropologists have increasingly pointed to the overlapping nature of anthropological and epidemiological interests and have sung the praises of collaborative research, especially that focusing on the health consequences of human behavior [1–6]. Books have been written on the need for interdisciplinary, anthropological–epidemiological approaches to the study of health and disease [7]. Sessions at national meetings have been devoted to 'anthropological encounters with epidemiology' [8]. And editorials in major journals have deemed the "integration of epidemiological and ethnographic research methods" to be necessary for the continued maturation of the field of medical anthropology [9].

Nevertheless, as noted by Trostle [6, 10], the history of such collaboration has been one of "benign neglect" and many "missed opportunities", and some observers have even pointed to an active "schism" between the anthropological and epidemiological communities [11].

In (a) reflecting on the actual lacuna of integrative, anthropological–epidemiological research, (b) listening to unofficial discourse about epidemiology in anthropological meeting places and classrooms, and (c) reading the many penetrating critiques of epidemiology that have been advanced by anthropologists in recent years [11–17], I have noted five major areas of divergence between anthropology and epidemiology—*as perceived by medical anthropologists*—which may have prevented such interdisciplinary connections from flourishing. However, as will be argued here, these perceived areas of divergence may be reconceptualized as areas of *convergence*, which may serve as the impetus for the performance of meaningful, synthetic studies that are greater than the sum of their individual anthropological or epidemiological contributions.

Although this article represents yet another call for the establishment of interdisciplinary linkages, it is intended neither as a review of the published literature on the potentials and pitfalls of integrating anthropology and epidemiology (although much of this literature is referenced within), nor as a review of the major epistemological assumptions, methodologies, and research goals of these disciplines (which are usually defined in standard textbooks). Rather, in an effort to stimulate discussion on this subject, my goal is to survey briefly the views that many medical anthropologists seem to hold concerning the schism that divides the discipline of epidemiology from anthropology and to suggest that this schism can—and should—be bridged.

1. EPIDEMIOLOGISTS STUDY BIOMEDICALLY DEFINED DISEASES; ANTHROPOLOGISTS STUDY ILLNESS EXPERIENCES

As formally defined, epidemiology is "the study of the distribution and determinants of *diseases* and injuries in human populations" (emphasis added) [18, p. 1]. In other words, epidemiology, as has been noted by anthropologists [4, 5, 14], is disease-oriented, and disease—defined as "abnormalities in the structure and/or function of organs and organ systems; pathological states whether or not they are culturally recognized" [19, p. 264]—is viewed by most anthropologists as a Western biomedical construct. Anthropology, on the other hand, tends to study 'illness', which encompasses the cultural meaning and social relationships experienced by the patient [20]. The 'disease–illness distinction' has been noted by quite a large number of anthropologists [e.g. 14, 19–25] and, as it now stands, is an abstraction that has become somewhat reified in medical anthropology.

However, do epidemiologists and anthropologists differ on such a fundamental level in their subject of

investigation? As argued by a number of anthropologists, this distinction between disease and illness is based on the questionable assumption that the biomedical definition of 'disease' is somehow objective and culture-free [19, 26–33]. In fact, medical anthropologists have provided rather convincing evidence that *disease itself is a cultural construction*. Such evidence includes, *inter alia*,

(1) demonstration of the rapidly changing state of affairs in biomedical definitions of 'disease' states [11]:
(2) analysis of the degree to which 'folk models' permeate biomedical physicians' notions of disease definition and causation and create great difficulties for epidemiologists who must guess what physicians *really mean* by such entities as 'viral syndrome' [34]; and
(3) examination of the degree to which biomedical practitioners' definitions of disease and disease causation differ from one cultural context to the next [35, 36].

Furthermore, as Nations [13] points out, by joining forces, anthropology and epidemiology, with their recognition of the multiple causes of *illness*, have the potential to force a significant "paradigm shift", in which biomedicine will be pressed to rethink widely accepted Western biomedical schemata of disease classification and etiology, including the standard International Classification of Diseases (ICD-9-CM). Indeed, epidemiology, like medical anthropology itself, is not necessarily uncritical in its acceptance of biomedical notions of 'disease' or limited models of etiology; the subfield of 'social epidemology', for example, is dedicated to the study of the *social relations* of poor health rather than narrowly defined disease outcomes [37].

Part of the perception that epidemiology and anthropology are studying different problems stems from the belief within the anthropological community that epidemiology is a mere 'handmaiden' of biomedicine. In fact, epidemiology is widely viewed as the statistical subdiscipline of biomedicine [14, 38]. It is extremely important to note, therefore, that epidemiology is a public health specialty [37, 38], which is taught on the master's and doctoral levels within schools of public health. Until very recently, epidemiology was *not* a required subject in most medical schools in the U.S., and, more often than not, it is still taught today in a superficial manner, if at all. This educational lacuna is reflected in the significant number of physicians, most of them interested in international and public health, who are compelled to seek extracurricular training in epidemiology, either through Master's of Public Health (MPH) programs or through courses offered by the Centers for Disease Control (CDC).

Thus, epidemiology and biomedicine do not go hand in hand, as many anthropologists mistakenly assume. In reality, epidemiological and biomedical models of disease and disease causation are quite different, involving different units of analysis, levels of abstraction and models of causality [39]. Indeed, as Gifford [17] has so convincingly argued, the divergent epistemological assumptions of epidemiology and clinical medicine can lead to severe dilemmas in the translation of epidemiological knowledge to clinical practice. Although more and more physicians (as well as medical anthropologists) are receiving epidemiological training in part to grapple with such dilemmas from an informed perspective, epidemiology, in reality, remains quite marginalized in the biomedical scheme of things, since epidemiology is population and public-health-based and does not involve clinical intervention (or the M.D. degree). Thus, epidemiology, like medical anthropology, operates largely within its own sphere—one that is somewhat peripheral to the domain of biomedicine. In this respect, epidemiology and medical anthropology share markedly similar structural positions *vis a vis* biomedicine—a commonality that should serve to unite rather than divide them.

2. EPIDEMIOLOGY IS REDUCTIONISTIC AND POSITIVISTIC; ANTHROPOLOGY IS HOLISTIC AND HUMANISTIC

Related to this perception that epidemiology and anthropology are divided by their subject matter and affinities to biomedicine is the belief among many medical anthropologists that epidemiology is reductionistic and positivistic, whereas anthropology is holistic and humanistic [14–17, 38]. Put more concretely, epidemiology is seen as a highly scientific, computer-laboratory-based form of 'number-crunching', devoid of real human interaction, whereas medical anthropology is seen as a highly interactive, interpretive, intensive encounter with real people on their own terms and turf.

Again, these are stereotypes that do more to inhibit interaction between the two fields than to promote understanding. As anyone who is familiar with the ongoing debates in anthropology is aware, the argument over whether or not anthropology should be 'scientific' continues [40–43], with number-crunching 'positivists' on one side of the divide and humanistic 'interpretivists' of various kinds on the other. Thus, anthropology itself is by no means settled on the issue of positivism vs humanism, with many different perspectives represented within anthropology as a whole, within the subfield of sociocultural anthropology, and within the subspeciality of medical anthropology.

Similarly, epidemiology is not a monolithic enterprise, and not all epidemiologists are 'reductionists', narrowly focused on limited conceptions of diseases, risk factors, and their numerical interplay. Epidemiology is neither lacking in breadth, interdisciplinary vigor, and critical reflexivity, nor narrowly fixated on limited notions of disease, risk and causation. Indeed, it is quite fair to state that epidemiologists' concerned

discussions of their own forms of 'bias' [44] and the pitfalls of current methodologies [45–46] are much more sophisticated than those of anthropologists, who, until the very recent era of heightened 'reflexivity' [42], had been strangely silent on the potential limitations of the ethnographic enterprise.

In a similar vein, one need only review Trostle's [6, 10] comprehensive reviews of the histories of anthropology and epidemiology to realize that at least some epidemiologists have been quite broad and holistic—even 'anthropological'—in their thinking for a period of time longer than the development of professional anthropology in the West. Nineteenth-century epidemiological studies, rooted in geographical and social medicine, attended to both behavioral and social factors, presaging the collaborative efforts between anthropologists and epidemiologists that were to begin in the mid-twentieth century [10]. In fact, the critique of epidemiology as a purportedly positivistic discipline, which is inherently apolitical, ahistorical, and acultural [12], appears to view epidemiology, ironically enough, from a historically decontextualized perspective. As the history of epidemiology shows, since its inception more than a century ago, epidemiology has considered the political–economic nature of numerous health problems, including the historical development of diseases rooted in ecologically disruptive development schemes. Thus, for at least some broad-minded epidemiologists, political–economic analyses of health problems are nothing new—despite their 'reinvention' within the so-called 'critical' social sciences.

3. EPIDEMIOLOGY AND ANTHROPOLOGY EMPLOY DIFFERENT METHODS

Because epidemiology is viewed by anthropologists as a form of science, it is said to engage in a form of narrow 'scientism' [15], based largely on an inflated concern with scientific methodology—or what might best be called 'methodolatry'. Thus, its purportedly 'scientific' methods are deemed incompatible with those of anthropology, which are based on naturalistic inquiry [47].

The vast majority of epidemiological studies, however, are not 'experimental', and are considered instead to be 'observational' [48], just as anthropological studies are 'participant observational'. In fact, perhaps the most common method of data collection employed in epidemiology is the same one employed in anthropology: i.e. talking with people. Epidemiologists gather data through communicating with the well, the ill and their caretakers, just as medical anthropologists do. Although the interviewing techniques of epidemiology tend to be more 'formal' than those of anthropology, since they rely on standardized interview schedules, they nevertheless may be quite in-depth.

If epidemiology and anthropology do differ methodologically, the difference may be one of scope rather than kind. Anthropologists tend to have a greater variety of methods to choose from than do epidemiologists [e.g. 49–51] and are much less concerned than most epidemiologists in establishing normative methodological standards [15]; however, all of the methods used by epidemiologists, including interviewing, archival research and record review, are also components of the anthropological tool kit. Conversely, epidemiologists tend to deal with larger sample sizes than do anthropologists and to work with people who do not view themselves as necessarily connected in any way [4]; yet, some epidemiological studies, especially those in genetic epidemiology, work with very small sample sizes of individuals who are often related. Thus, there are no fixed rules that divide the epidemiological and anthropological enterprises on a methodological basis, and it could be argued that their similarities are perhaps greater than their differences.

It is no wonder, then, that more and more medical anthropologists have been attracted to epidemiology because of what might be called 'methodological fit'. Although epidemiology offers research designs and data analysis methods that are different from those of anthropology, data collection methods tend to be somewhat familiar to anthropologists, and it is clear to most anthropologists who receive epidemiological training that they can 'wear two hats' quite easily. It is surprising, then, that so few anthropologists have actually carried out synthetic studies, in which anthropological and epidemiological questions about human behavior and health are combined in one study. Janes [52], an epidemiologically trained medical anthropologist and a proponent of the "ethnography of disease risk", has provided one of the few examples of what could be considered synthetic 'ethnographic–epidemiological' research [53] in his study of risk factors for hypertension among migrant Samoans. Likewise, Zunzunegui and colleagues [54], anthropologically oriented epidemiologists, have undertaken such research on male sexual behavior as a risk factor for cervical cancer among migrant Hispanic women in southern California. Yet, such examples are few and far between, with most commentators agitating for more *collaborative* efforts between anthropologists and epidemiologists [2, 4], rather than for *synthetic* efforts by those trained in *both* disciplines. Given that the number of dually trained individuals is gradually increasing, such synthetic studies can be expected to grow in number in the coming years.

4. EPIDEMIOLOGY 'BLAMES VICTIMS' FOR THEIR 'RISKY' BEHAVIORS; ANTHROPOLOGY EXAMINES THE MACRO-LEVEL CONDITIONS GIVING RISE TO THOSE BEHAVIORS

Because epidemiology is interested in part in assessing the relationship between human behavior and disease, some medical anthropologists are alarmed by

the possibility of 'victim-blaming' [16]: i.e. that epidemiology identifies and blames individuals for their health-demoting behaviors. Yet, epidemiology is population-based and is explicitly concerned with a level of analysis above and beyond that of the individual. Furthermore, identifying population-based behaviors that are deleterious to human health is not the same as 'blaming' individuals—or the cultures of which they are a part—for those behaviors. In fact, if epidemiology is to be faulted in any way, it is for failing to go beyond mere identification of behaviors to attempt culturally meaningful explanations and contextualizations of those behaviors [2, 4, 5, 12, 13, 16, 38]. In other words, epidemiology asks 'who', 'when', 'where' and 'how' questions, without posing the crucial anthropological 'why' question [5, 14, 26, 55]. This is why, as Nations [13] so cogently argues, epidemiology *needs* anthropological and especially ethnomedical perspectives to, as she puts it, prevent "epidemiologic *rigor*" from becoming "*rigor* mortis".

However, if epidemiologically aware anthropologists "take over where epidemiology leaves off" [16] by attempting to explain why people behave in ways that are harmful to their health, are we the guilty 'victim-blamers'? Again, it is important to distinguish between explaining and blaming. Just because medical anthropologists study issues of human misery—including misery that is humanly created—it does not mean that our intention is one of 'blaming'. On the other hand, few medical anthropologists are probably true cultural relativists in accepting without repugnance obvious health-demoting practices involving exploitation, domination, abuse or infliction of pain—even when culturally condoned. Furthermore, because many of us are 'problem-oriented' in our studies, we acknowledge that there are 'problems' that need to be solved or alleviated. For example, infertility in Egypt, the subject of the author's own 'ethnographic–epidemiological' research [36, 56], is truly a 'problem' for those affected by it [35, 57]; yet, certain practices on the part of Egyptian men, women and health care providers can be shown epidemiologically to lead to infertility. Identifying such culturally grounded practices is not synonymous with 'blaming' the individuals who perform these practices, nor the culture that prescribes them. Rather, ethnographic insights from long-term participant observation in the culture under investigation shed light on the meaning and reasonableness of various health-demoting practices within a particular cultural milieu, as well as the political–economic forces that contribute to their perpetuation. From a cultural relativist position, then, these practices are neither 'right' nor 'wrong' and hence blameworthy; instead, they are either 'present' or 'absent' and, when present, may be associated with a potentially preventable health problem that may be perceived as highly problematic for those affected by it.

Indeed, anthropology has an extremely important role to play in examining health problems and their behavioral antecedents in order to contribute to *population-based* health policy and health protection research. Gifford [17, p. 239], warning against the individualizing tendencies of biomedically defined 'health promotion', notes:

> '... here lies an important caveat for medical anthropologists who are working within the discipline of epidemiology. Many of us have been concerned with applying our anthropological understandings to epidemiologically defined social and cultural risk factors. And while our contribution is greatly needed, we should be wary that social and cultural processes do not become reduced to factors which are translated *only* into individual health promotion. Rather, we must ensure that our understandings are more general in application and have relevance to health protection research and health policy issues. It is here that our strength as medical anthropologists lie in that the application of our knowledge needs to be directed primarily towards socio-cultural solutions rather than medical interventions' (emphasis in the original).

5. EPIDEMIOLOGY GENERATES 'RISK' AND MEDICALIZES LIFE; ANTHROPOLOGY CRITIQUES 'RISK' AND ATTEMPTS TO ALLEVIATE HUMAN SUFFERING

Indeed, in her statement, Gifford points to a related area of concern regarding the influence of epidemiology over anthropology: namely, that if anthropologists, like epidemiologists, become heavily involved in the generation of sociocultural 'risk' data, then we may unwittingly contribute to the increasing medicalization of life by providing definitions of 'risky' behavior, 'at-risk' groups, and 'risk-reduction' strategies which may be used in undesirable ways by the biomedical community. For many medical anthropologists, whose cultural critique of biomedicine has focused on the insidious medicalization of everyday life [58–60], the thought of somehow contributing to this process through the identification of biomedically modifiable 'risk factors' is especially alarming.

Nevertheless, most medical anthropologists, along with many epidemiologists and biomedical practitioners, share as one of their major goals the production of knowledge that will be useful in the alleviation of human suffering. Furthermore, many medical anthropologists, and particularly those involved in international public health research, believe that it is important to produce such knowledge in the hope that it will some day prove useful in *prevention*. Indeed, as Robert Hahn so aptly concluded in his discussion at a recent American Anthropological Association annual meeting session [8], the major question still facing us is: "How do we turn the critique of risk into a practical public health approach?"

For those of us participating in the generation of risk data through synthetic anthropological–epidemiological research, Hahn's "critique of the risk critique" is especially important. Although we in the West recoil at the thought of living lives 'at risk' as biomedicine might have it [17, 61], it is important to bear in mind that life throughout much of the world,

Western and non-Western alike, is, indeed, inherently 'risky'—if not from the debilitating effects of poverty, chronic malnutrition, and infectious disease, then from the noxious effects of occupational toxins, environmental degradation, violent crime, and political turmoil. Although the inherently Eurocentric, privileged critique of risk is cogent and well-founded, there is certainly a need for an *alternative discourse on risk*—one concerned with the very real risks of disease, debility and death in many less privileged areas of the world.

CONCLUSION

Synthetic, interdisciplinary anthropological–epidemiological research is relatively rare, due in large part to perceptions among many medical anthropologists that anthropology and epidemiology diverge considerably in their topics of inquiry, epistemological assumptions, methods of data collection and notions of risk and responsibility for illness. Having argued here that many of these areas of perceived divergence are more illusory than real, it seems appropriate to conclude by concurring with the epidemiologically minded medical anthropologist, William R. True [3, p. 299], who states:

> While...anthropological commentaries emphasize the different methods of epidemiology and the nature of epidemiological data, anthropologists have not recognized that the roots of epidemiology place the field squarely in the anthropological tradition of understanding how the well-being of human beings is directly affected by their physical, social and cultural environments. By not availing ourselves of epidemiological training or perspectives and by engaging in the all-too-familiar occupational hazard of talking to ourselves about the problems of other disciplines, we lose a valuable opportunity to move our discipline in exciting new directions.

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