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Feminism meets the “new” epidemiologies: toward an appraisal of antifeminist biases in epidemiological research on women’s health

Marcia C. Inhorn^{a,*}, K. Lisa Whittle^b

^aDepartment of Health Behavior and Health Education, School of Public Health, University of Michigan, Ann Arbor, MI 48109-2029, USA

^bInstitute for Women’s Studies, Emory University, Atlanta, Georgia 30322, USA

Abstract

This essay explores an alternative paradigm for epidemiology, one which is explicitly informed by a feminist perspective. We intend to expand upon recent critiques and debates within the emergent fields of “critical”, “popular”, and “alternative” epidemiology to examine how epidemiology’s conceptual models — which are meant to contribute to the prevention of social inequalities in health, but may instead reinforce social hierarchies based on gender, race, and class — constrain our understanding of health and disease. Specifically, we examine persistent antifeminist biases in contemporary epidemiological research on women’s health. Issues highlighted include: problem definition and knowledge production in women’s health; biological essentialization of women as reproducers; and decontextualization and depoliticization of women’s health risks. As part of this critique, we include suggestions for an emancipatory epidemiology that incorporates an alternative feminist framework. © 2001 Elsevier Science Ltd. All rights reserved.

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Introduction

If the biological finality of death can only be explained in wider social context then the complex realities of women’s sickness and health must be explored in similar ways. In order to do this, traditional epidemiological methods have to be turned on their head. Instead of identifying diseases and then searching for the cause, we need to begin by identifying the major areas of activity that constitute women’s lives. We can then go on to analyze the impact of these activities on their health and well being. Lesley Doyal (1995, p. 1)

Epidemiology is currently engaged in a moment of critical self-reflection, debating its models, theories, methods, levels of analysis, guiding principles, ethics,

and future role in protecting the public’s health.¹ These debates have been precipitated by the increasing concern over the “reductionism” of mainstream, university and government-agency-funded epidemiology in the United States (Pearce, 1996; Susser & Susser, 1996a, b; Wing, 1994; Winkelstein, 1996). Namely, critics from within epidemiology have argued that epidemiology, as the “basic science” of public health, has adopted a biomedical, clinical science model (Charlton, 1997) for the study of disease “risk factors”, which has taken epidemiology away from its fundamental roots in public

¹ Examples of these critiques can be found in the following recent works: Diez-Roux and Nieto (1997), Krieger et al. (1993), Krieger and Zierler (1995, 1996); Lawson and Floyd (1996), Ozonoff and Boden (1987), Pearce (1996), Savitz (1997), Susser and Susser (1996a, b), Weed (1995), and Wing (1994). In addition, medical anthropologists Trostle and Sommerfeld (1996) have written a recent review article that summarizes many of the salient issues and critiques, as well as forwarding a proposal for the development of “cultural epidemiology”.

*Corresponding author. Fax: +1-734-763-7379.

E-mail addresses: minhorn@umich.edu (M.C. Inhorn), lisawhittle@worldnet.att.net (K.L. Whittle).

health (Lawson & Floyd, 1996; Pearce, 1996; Susser & Susser, 1996b; Weed, 1995). In particular, the myopic focus of biomedicine on microlevel causes of diseases in individuals (e.g., human genes, infectious agents) has subsequently been translated within “modern”, “analytical”, “risk factor” epidemiology into a “single exposure–single disease” paradigm of illness that does little to generate effective preventive health strategies (Wing, 1994), especially for chronic illnesses (Scribner, 1997; Susser & Susser, 1996a, b).

Historically, epidemiology *has* employed various models that consider the broader social context, including political–economic conditions that impinge upon human well-being (Krieger, Rowley, Herman, Avery, & Phillips, 1993; Pearce, 1996; Trostle, 1986; Weed, 1995; Wing, 1994). There are many such examples in the history of epidemiology (Pearce, 1996; Wing, 1994), with John Snow’s “pump-handle diplomacy” over *Vibrio cholera* in the streets of London being epidemiology’s most popular historical story (Weed, 1995). However, as lamented by many a contemporary critic, the true “public health” dimension of epidemiology so apparent in the early days of Snow, Virchow, Goldberger, and other epidemiological pioneers has been lost — and replaced instead by the prevailing and hegemonic disease model in epidemiology, which frames health problems in terms of decontextualized exposures to risk factors, including the isolated behaviors of individuals (Wing, 1994). Thus framed, dominant, mainstream epidemiological research encourages public health policies that: (1) blame individuals for their poor health by portraying risk as a lifestyle choice (Lupton, 1993; Pearce, 1996); (2) limit our understanding and prevention of disease causation by ignoring meaning as a determinant of human behavior (Lawson & Floyd, 1996);² (3) leave unquestioned social hierarchies of gender, race, and nation by ignoring how these relationships mediate an individual’s power, personal agency, and available choices relating to their health (Farmer, Connors, & Simmons, 1996; Krieger et al., 1993; Krieger & Zierler, 1995, 1996); and (4) overlook how local and global political economies, including policies of nation-states, affect health and disease.³ As

²Lawson and Floyd (1996) point out that epidemiological studies routinely evaluate the percentage of people in a population who responded to a specific public health intervention while ignoring why people respond as they do, how people interpret the intervention, its sources, or the behaviors themselves. The nature of epidemiology’s “closed” system of knowledge precludes asking or interpreting answers to these questions and ignores meaning as a determinant of human behavior.

³Examples of this include public health actions to reduce tobacco consumption and banning of hazardous materials in the US that result in stimulating manufacturers to aggressively promote their products in countries economically poorer than the US. Pearce (1996) notes that when public health problems

one critic (Brown, 1997, p. 137) notes, “Epidemiology . . . has been transformed in recent decades to a largely laboratory science model, often more concerned with protecting the increasingly rigid standards of scientific procedures than with safeguarding public health.”

How to “reform” epidemiology has been the focus of some discussion, with most commentators advocating the “reintegration” of epidemiology into “public health”. Beyond this general calling, suggestions for change include: (1) new “socialization” efforts for epidemiologists (Susser & Susser, 1996b), in order to alter their epidemiological “mind set”, which has become a “conceptual ghetto” (Weed, 1995); (2) new multidisciplinary approaches, which privilege social context and systems analysis (Koopman, 1996; Krieger et al., 1993; Pearce, 1996; Wing, 1994), so that epidemiologists can “know about disease” in its entirety (Diez-Roux & Nieto, 1997); and (3) development of explicit epidemiological theory, drawing from the humanities (Weed, 1995), ethics (Weed, 1995), human ecology (Krieger & Zierler, 1995; Wing, 1994), political-economy (Krieger & Zierler, 1995, 1996), and even postmodernism (Pearce, 1996). However, as noted by Wing (1994, p. 84), there has yet to emerge a “coherent set of theories, assumptions and techniques that could constitute a real new paradigm” in epidemiology.

“New” epidemiologies and their articulation with feminism

In this essay, we hope to contribute to an alternative paradigm for epidemiology, one which is explicitly informed by a feminist perspective. To this end, our thinking clearly has been informed by three emerging forms of “new” epidemiology, including: (1) the critical epidemiology of Krieger & colleagues (Fee & Krieger, 1994; Krieger et al., 1993; Krieger & Fee, 1994; Krieger & Zierler, 1995, 1996); (2) the popular epidemiology of Brown (Brown, 1992, 1997); and (3) the alternative epidemiology of Wing (1994) and Turshen (1984). We outline these three new approaches; then we propose a fourth approach, “feminist epidemiology”, which articulates with the other three approaches but also moves beyond them in ways to be described in this essay.

footnote 3 continued

such as tobacco smoking are studied in individual terms rather than in population terms (which would examine tobacco production, advertising, distribution and the social and economic influences on consumption), the solution is usually defined in individual terms and public health actions result in moving the problem from rich to poor countries and from rich to poor populations in industrialized countries.

Critical epidemiology

The critical epidemiology of Krieger and colleagues,⁴ which includes provocative, feminist-informed insights on the nature of contemporary epidemiological practice, provides a crucial springboard for the more explicit feminist epidemiological approach to be described below.

Krieger and colleagues criticize the empirical methods and underlying constructs of US epidemiological research and describe a newly emerging approach for investigating the relationship between racism, sexism, classism, and health “that has yet to be synthesized into a well-defined paradigm” (Krieger et al., 1993, p. 99). Although Krieger and her colleagues do not explicitly mention feminism, critical gender theory, or women’s studies in their “new approach”, feminist methodological strategies and research principles appear to be guiding their work, including their pathbreaking epidemiological studies of race, class and gender oppression in women’s health outcomes.⁵

The critical, feminist-informed stance advocated by Krieger and her colleagues includes all of the following elements: (1) collapsing binary constructions of biological/social, body/mind, physical/spiritual to explore the dynamic interplay between exposure and susceptibility in determining “risk”; (2) continuously and reflexively asking how gender/race/class/nation function on the individual, family, societal, and global levels in shaping daily life and experiences of health and illness; (3) investigating how these combined factors affect everyone (including professionals, whites, and males) in dialectical relationships of privilege and oppression, protection and risk, rather than exclusively studying how they affect those who have historically been construed as “other” than the “norm”; (4) engaging in a “consciousness raising” of public health and epidemiological researchers which involves (a) critically questioning theoretical constructs, (b) examining the historical legacy of racism, classism and sexism in the profession, and (c) imagining alternative ways of creating epidemiological knowledge; (5) recognizing that the politics of science and our social locations within it preclude an “objective” view of the “facts”, and demanding that we examine not only the biases we bring to research but also that we value experiential knowledge as scientific; (6) foregrounding concern for the ethical implications of research including the exploitation of women and members of “minority” groups as research subjects; and (7) emphasizing action-

oriented research which includes liberatory goals and transformation of hierarchical institutions.

Popular epidemiology

Popular epidemiology, as forwarded by Brown (1992, 1997), shares some similarities with the aforementioned critical approach. Both of these “new” epidemiologies challenge the epidemiological status quo, and both insist on health activism to unearth and eliminate the causes of poor health. But popular epidemiology, as its name implies, diverges from the feminist-informed critical epidemiology of Krieger and colleagues in its privileging of grass-roots, participatory approaches to epidemiological knowledge production. Namely, as defined by Brown (1997, p. 137), “Popular epidemiology represents two related phenomena: (1) a form of citizen science in which people engage in lay ways of knowing about environmental and technological hazards, and (2) a type of social movement mobilization which increasingly plays a major part in modern political culture.” Brown emphasizes that popular epidemiology goes beyond mere public participation in “traditional” epidemiological research, in that it (1) challenges basic assumptions of traditional epidemiology, risk assessment, and public health regulation; (2) involves lay persons’ gathering of data, as well as collaborating with experts; (3) emphasizes social structural factors as part of the causal disease chain; and (4) utilizes political and judicial approaches to remedies. As such, popular epidemiology shares much in common with recent approaches to the sociology of risk.⁶ For example, Beck’s (1992) well-known work, *Risk Society*, discusses public challenges to science and the emergence of new political forms of protest as risk is increasingly open to the public gaze. For Beck, we live in a “risk society” where the whole world has become a place of unforeseen danger. Although the totality of this threat quiets many people, it also provokes growing opposition from both highly educated, politically active, as well as less educated people “for whom this toxic threat is a great rupture in the routinely accepted life they had expected” (Brown, 1997, p. 154). Indeed, such popular opposition among working-class people has played a significant role in identification of disease clusters resulting from toxic waste contamination, as well as political mobilization efforts to clean up toxic waste sites. These efforts have often mirrored feminist health campaigns, in that women, including working-class women, have generally played key roles in the toxic waste movement. As Brown explains (1997, p. 145):

⁴Krieger and colleagues do not specifically call their new epidemiological approach “critical epidemiology”. However, others (e.g., Brown, 1997) have used this term to apply to Krieger’s approach.

⁵For numerous references to this work, see the bibliography in Krieger et al. (1993).

⁶Recent examples of this literature include: Beck (1992, 1995, 1996), Clarke and Short (1993), Krinsky and Golding (1992), Luhmann (1993), and Marske (1991).

Women are the most frequent organizers of lay detection, partly because they are the chief health arrangers for their families, and partly because their child care role makes them more concerned than men with local environmental issues... These roles lead women to be more aware of the real and potential health effects of toxic waste, and to take a more skeptical view of traditional science. They often undergo a transformation of self, based on changes noted by Belenky, Clinchy, Glodberger and Tarule, (1986) in their concept of 'women's ways of knowing'. That perspective traces the ways that women come to know things, beginning with either silence or the acceptance of established authority, progressing to a trust in subjective knowledge, and then to a synthesis of external and subjective knowledge. This kind of knowledge framework makes it logical that women toxic activists would gravitate to a popular epidemiology approach.

Alternative epidemiology

An approach that is less concerned with feminist issues or women's health activism is the alternative epidemiology being forwarded independently by Wing (1994) and Turshen (1984). Like Krieger and Brown, these critics offer a "broad critique of the dominant practice of epidemiology" and oppose "the view that the discipline is essentially on track but needs fine tuning" (Wing, 1994, p. 83). Instead, both Wing and Turshen propose an alternative epidemiology that fundamentally challenges the "exposure-disease" model in mainstream epidemiology by attending instead to the social, economic, and political practices and arrangements that produce such exposures and diseases. Thus, for both Wing and Turshen, fundamental questions about "why" diseases are produced among particular populations at particular historical moments take precedence, and an explicit part of any epidemiological agenda must include efforts to oppose social injustice and inhumanity. Thus, Wing outlines a seven-point manifesto for how such an alternative epidemiology would be practiced, including: (1) analyzing differential effects (what is good or bad *for whom?*); (2) looking for connections between many diseases and exposures rather than always isolating exposure-disease pairs; (3) looking for side effects of exposures and interventions; (4) developing ways to utilize historical information, including developmental narratives of particular populations and even individual people; (5) addressing the conceptual framework of the research, including analyzing assumptions about the social construction of scientific knowledge; (6) addressing the essential *context* of exposure and disease rather than controlling for context as a "nuisance factor"; and

(7) displaying humility about the scientific research process and an "unrelenting commitment to playing a supportive role in larger efforts to improve society and public health" (Wing, 1994, p. 84).

Feminist epidemiology

These three forms of "new epidemiology" have inspired us to propose a fourth form, which we call "feminist epidemiology". Feminist epidemiology employs many crucial insights from the three aforementioned approaches, but diverges from them by offering: (1) an *explicit* (as opposed to Krieger's *implicit*) feminist critique of what we call "antifeminist biases"⁷ in epidemiological research on women's health; and (2) a feminist-informed research agenda, which draws upon the theoretical work of third world feminists (Mohanty, Russo, & Torres, 1991) and Euro-American feminists of color (Collins, 1991; Hooks, 1981, 1983, 1994). As feminist epidemiologists,⁸ we argue that we must focus on women's health in particular, for this area of research has been historically marginalized by both biomedicine and public health via a narrow definition of women's health revolving around reproduction and reproductive pathology (Koblinsky, Campbell, & Harlow, 1993; Lane, 1994; Sargent & Brettell, 1996).

Our feminist critique of antifeminist biases in epidemiological research on women's health focuses explicitly on mainstream, academic and government-agency-funded US epidemiology — and thus does not consider the three "new" epidemiologies described above to be part of this dominant paradigm, nor subject to our critique.⁹ In other words, we challenge the hegemonic

⁷We prefer the term "antifeminist" to "sexist" or "chauvinist", as "antifeminist" implies opposition to the feminist principles we are advocating.

⁸With respect to our authorial positionality, we are anthropologists and epidemiologists who are generally sympathetic to epidemiological approaches and who have urged greater synthesis of epidemiological and medical anthropological research perspectives (Inhorn, 1995; Inhorn & Buss, 1993, 1994). However, we are also feminist researchers concerned with issues of gender/race/class and local and global women's health; thus, we adopt a critical feminist stance for the purposes of this essay. We suggest learning from feminist researchers in other disciplines who have been grappling with difficult issues, such as the dilemmas of an activist stance, problems encountered doing collaborative work, harsh reactions of other scholars to feminist research, and difficulties in funding feminist research activities. See Fine (1993), Fonow and Cook (1991), Nielsen (1990), and Stanley (1990).

⁹Some work in mainstream social epidemiology — especially work which seriously examines health inequalities among women that are linked to social class(ism) (see Krieger et al., 1993, for examples) — would also be excluded from this critique.

form of epidemiology currently practiced in the US, which can also be generalized to US-based research studies of health problems (e.g., AIDS) in non-Western settings, and which is published in mainstream epidemiological journals (e.g., *American Journal of Epidemiology*, *Epidemiology*, *Epidemiological Review*, *International Journal of Epidemiology*, *Journal of Clinical Epidemiology*, *Journal of Epidemiology and Community Health*). We view this form of mainstream epidemiology as the methodologically rigorous discipline that mediates between biomedicine and public health. Through its modeling of disease causality within an exposure-disease paradigm, epidemiology serves to inform both the individualistic, patient-oriented framework of biomedicine and the population-based, community orientation of public health. Yet, despite its methodological rigor, epidemiology remains theoretically arid and politically unsophisticated in its models of disease causation — suffering from what one critic (Nations, 1986) has called epidemiological “*rigor mortis*”, in which the discipline as a whole has become “a set of methods without theory” (Pearce, 1996). Furthermore, it is plagued by a number of antifeminist biases to be explored in the following section of this essay. These include (but are not limited to) issues of: (1) problem definition and knowledge production in women’s health; (2) biological essentialization of women as reproducers; and (3) decontextualization and depoliticization of women’s health risks. In this essay, we examine these antifeminist biases in modern epidemiological research on women’s health, and suggest ways in which a feminist analytical framework can help epidemiology to engage in the task of better understanding and responding to women’s health concerns. Ultimately, we hope that this essay contributes to the ongoing debates about the future of epidemiology in the new millennium, as well as new directions for women’s health research.

Antifeminist biases in epidemiological research on women’s health

Problem definition and knowledge production in women’s health

In the new movement toward a more self-reflexive, critical epidemiology, debates often center on what epidemiologists should study — namely, what topics are worthy of epidemiological engagement and investment. Less often questions are asked about why and how epidemiologists produce knowledge, make knowledge claims, and articulate “difference” from the conjunction of knowledge/power. These epistemological (i.e., theories about the nature and scope of knowing, including presuppositions and grounds for making knowledge claims) and ontological (i.e., theories about the nature of

being and living) issues become increasingly important as epidemiology moves toward multi- and interdisciplinary research and as women and groups traditionally excluded from production of scientific knowledge bring experiential knowledge that challenges prevailing perspectives.

With few exceptions, the health problems and needs of women have been defined for them by the biomedical and public health establishments, which (1) are male dominated; (2) have focused their attention since WWII on the chronic disease “epidemics” affecting middle-aged, white men, particularly coronary heart disease, lung cancer, and peptic ulcer (Susser & Susser, 1996a); and (3) have often employed a logic of “difference” and “otherness” in their approach to women’s health (Whittle & Inhorn, in press). Indeed, the very “otherness” of women is evident in the major, two-volume US Public Health Service Task Force report on women’s health (1987, p. 3) that reads: “Health problems are considered women’s issues if they are unique to women, are more prevalent among women, are more severe among women, or involve different risk factors or control measures.” Although this proto-feminist government document can be applauded for its laudatory core recommendations (see Krieger & Zierler, 1995, for an overview), still implicit but unstated in it is the assumption that women are fundamentally different from the phantom male comparison group serving as the norm against which women’s health must be judged. Indeed, men’s experiences of health seem to provide the implicit norm against which public health defines and measures women’s health concerns. Women, as well as men in nonwhite racial/ethnic groups, have been excluded from clinical trials and cohort studies based on the acceptability of a white male norm for explaining health and disease (Hamilton, 1996). As Krieger and Fee (1994) point out, the logic guiding this epidemiological exclusion has little to do with assumptions of similarity between white men and others. Rather, historically produced notions of difference have become so firmly embedded in epidemiological research that women and men and whites and nonwhites have rarely been studied together; for the purposes of epidemiological rigor, it does not make sense to do so.

Despite the recent attention being paid to women’s health — including the creation of the Office of Research on Women’s Health in the National Institutes of Health and the Office of Women’s Health in the Centers for Disease Control and Prevention (Rosser, 1994) — research priorities continue to be decided by the public health funders and the epidemiologists conducting scientific investigations, most of whom are white, middle-class men interested in the risk factors that affect them (Pearce, 1996). If epidemiology is to formulate models that help us understand the varying social distributions of health and illness, including their

occurrence among women, people of color, and non-elite white men, then epidemiologists — who, by the very nature of their training, constitute a highly educated, elite professional corps in white, Euro-American society — must deal seriously with issues of problem definition, knowledge production, and power relationships.

From the standpoint of feminist epidemiology, the dominant epidemiological establishment must critically address the exclusion of lay women's voices from the processes of both problem definition and knowledge production — asking how epidemiology can operate within an “open” system of knowledge (de Koning & Martin, 1996; Hooks, 1994). In the current “closed” system, an elite cadre of epidemiologists, biostatisticians, biomedical professionals, and public health practitioners possesses the privileged knowledge, power, and authority to identify and name diseases; collect data pertaining to these diseases; define and measure the variables hypothesized to produce disease “risk”; create and evaluate interventions aimed at preventing disease risk; and establish public health goals and policies which determine how resources are to be allocated and health issues prioritized. The lack of a feedback loop allowing for non-elite people's experiences, meanings, subjectivities, narratives, and expertise to inform the production of knowledge maintains this closed system (de Koning & Martin, 1996; Hooks, 1994). “Opening” this closed system requires more than just eliminating the barriers faced by women and members of groups excluded from the making of epidemiological knowledge; instead, it requires a fundamental questioning of the assumptions and methodologies of epidemiology itself.

Yet, challenging this closed system of epidemiological knowledge production means challenging the history of biomedicine; for, historically, the biomedical model, upon which epidemiology is based, has cultivated its prestige and power by maintaining this closed system of knowledge. Not only are there few historical examples of biomedical/epidemiological research that have incorporated the views of women — actively seeking from them information on what ails them — but there are actually many examples from biomedical history in which women's health knowledge has been devalued and even outlawed. For example, feminist historians have provided vivid accounts of how establishment biomedicine dismantled lay midwifery in the US, discrediting local women's knowledge of pregnancy and delivery, medicalizing childbirth as a pathological event, and establishing legal and economic restrictions on women's access to non-hospital-based midwifery care (Ehrenreich & English, 1973, 1978; Litoff, 1990). The implications of such restrictions were particularly severe for poor women of color, who were the main beneficiaries of such local midwifery systems in the rural American South (Dougherty, 1982; Fraser, 1995).

Today, part of the reason why women's voices continue to be excluded from problem definition and knowledge production has less to do with consolidation of professional power and authority in biomedicine than with disciplinary boundaries and methodological approaches that are exclusionary and continue to divide the intellectual landscape in women's health research. Namely, epidemiologists involved in women's health research may fear treading outside their discipline or expanding their traditional methods of scientific inquiry in order to generate new research questions and forms of data. Yet, a truly feminist-informed epidemiology requires moving away from the lamppost of conventional epidemiology, and confronting difficult epistemological, methodological, and ethical issues surrounding the nature of epidemiological research. Frankly, the “opening” of epidemiology requires that epidemiologists join forces with anthropologists, sociologists, historians, and feminist scholars, who are not only more theoretically oriented but who also value alternate, qualitative forms of data (e.g., illness narratives, life histories, participant observations, structured observations of doctor–patient interactions, popular media accounts, historical documents) that give context and meaning to epidemiologists' more quantitative analyses (Inhorn, 1995; Inhorn & Buss, 1993, 1994; Trostle, 1986). As will be described in the final section of this essay, black feminist scholars (e.g., Collins, 1991) in particular have called for an “Afrocentric feminist epistemology” that draws upon “dialogue” and “call-and-response” as methodological strategies that would privilege black women's “experiential knowledge and wisdom” and thus lead to new forms of knowledge creation. Ultimately, we believe that epidemiology as a discipline would greatly benefit from much greater methodological triangulation and theoretical engagement with women's studies, the social sciences, and the humanities. Through such engagement, the field of epidemiology as a whole could begin to be “decentered” from its masculinist, white, Euro-American axis of privilege to allow for more democratic, egalitarian and participatory ways of knowing and using knowledge.

Indeed, we anticipate that epidemiology, perhaps more than many other disciplines, has the potential to evolve toward a feminist-informed science which pursues emancipatory goals and creates open systems of knowledge and knowledge sharing. Such potential resides in: (1) epidemiology's “shoe-leather” origins, in which highly anecdotal public information — for example, lay people's observations about connections between water and cholera (Goldstein & Goldstein, 1986) — was included in early epidemiological investigations (Brown, 1997); (2) its capacity to create and enhance channels for flows of knowledge and dialogue with general and specific populations in historical moments of public health crisis; (3) its mechanisms of

accountability to both the scientific community and the public; and (4) its increasing recognition of the need for self-reflection and auto-critique, as outlined in the introduction of this essay. These potentials seem to resonate most clearly in the movement toward the new form of popular epidemiology described by Brown (1992, 1997). Popular epidemiology draws upon a “science in action” approach, first outlined by Latour (1987), in which epidemiology becomes “open to the public”, a form of “citizen science” (Brown, 1997). In this new feedback model of scientific knowledge production, lay persons gather data and direct and marshal the knowledge and resources of experts in order to understand the epidemiology of disease. In turn, epidemiologists “experience the citizenry” and the problem being studied before laying claims to the “real meaning of epidemiological ‘fact’” (Brown, 1992, p. 275). Brown speculates that as the number of popular epidemiologists, or what he calls “maverick scientists”, grows, we may see a greater number of such well-designed “public studies”, in which lay people, particularly women, play a central role.

In conclusion, theorists and practitioners of liberatory education, including health educators practicing participatory research (Stein, 1997), embrace the principle that knowledge and learning can only be emancipatory when everyone claims — and is allowed to claim — knowledge as a field in which we all labor (de Koning & Martin, 1996; Hooks, 1994). An emancipatory epidemiology would require the elite cadre of specialists trained in viewing illness and health from a traditional public health perspective to listen to and engage with people articulating their lived experiences of health and illness within the social, political, economic, as well as biological context of their lives.

Biological essentialization of women as reproducers

This brings us to a second antifeminist bias in contemporary epidemiological research on women’s health: namely, lingering biological reductionism, or the severing of biological processes from the social, political, and economic determinants of health and illness. Because of the hegemony of a rather narrowly focused biomedical research model — aimed at “unravell[ing] the specific mechanisms of disease processes by tracing the biochemical pathways and pathological mechanisms of the body” (Fee & Krieger, 1994, p. 7) — little attention has been paid to how social conditions, including gender and racial discrimination and economic deprivation, adversely affect health (Krieger & Zierler, 1995).

Most salient from the perspective of women’s health is the continuing biological essentialization of women as reproducers, with their health thought of primarily in terms of reproductive capacity and function. In other

words, in current biomedical and public health models, women are seen first and foremost as reproducers, whose “health” (and that of their children) is determined by their ability to become pregnant, give birth, and adequately mother their offspring. Because women continue to be characterized as a single, universal “risk group”, defined by their reproductive biology, epidemiology ignores the ways in which the social realities of gender — as opposed to simple biological sex — manifest themselves in women’s bodies (Krieger & Zierler, 1995), through the creation of what one medical anthropologist has called, poetically, “life’s lesions” (Finkler, 1994).

Such “life lesions” take *many* forms in women’s lives, a list that would be too long to enumerate. But some clear examples of the ways in which gender relations “get into the bodies” of women (Krieger et al., 1993) — *and not only their reproductive bodies* — might include: (1) African–American women’s experiences with low-birthweight babies and the accompanying grief of high infant mortality (Krieger et al., 1993); (2) US societal preoccupations with ideals of thinness which have led to epidemics of dieting, eating disorders, and even smoking as a weight-reduction strategy among adolescent girls (Berman & Gritz, 1991; Bordo, 1993; Casper & Offer, 1990; Nichter, 2000); (3) women’s day-to-day experiences of racism and sexism at work and at home that, when unnamed and socially submerged, lead to raised blood pressure readings and the risk of hypertension and stroke, particularly among black women (Krieger, 1990); and (4) women’s experiences of sexual harassment, sexual abuse, rape, domestic violence, and other forms of “gender violence” (e.g., dowry deaths, honor killings, amniocentesis-aided female feticide, female circumcision), which have increasingly been recognized and prioritized in global conferences on women, health, and development, including in Cairo (1994) and Beijing (1995) (United Nations, 1995).

Indeed, explicit theory about the three major categories, “gender”, “race”, and “class”, and the multiple, interlocking forms of oppression that accompany these three categories to produce ill health in women’s lives, is lacking in contemporary epidemiology. These categories are often formulated inadequately as uncomplicated variables in epidemiological studies. Of particular concern here is that “sex” and “gender” have been historically conflated. As currently employed in feminist and social science analysis, the term “sex” often refers to a biological category, defined by biological characteristics pertaining to the ability to reproduce (Krieger et al., 1993). Thus, in the US and many other societies, sex is typically dichotomized as “male” and “female”. However, “gender” is a different construct, for it is a socially (human) constructed category, regarding culturally produced conventions, roles, behaviors, and identities involving notions of “masculine” and

“feminine”, and “heterosexual”, “homosexual”, and “bisexual”, which are constructed and performed in relation to each other (Butler, 1990). Consequently, it is not enough for epidemiologists to simply replace the term “sex” with “gender” in their analyses, as has been occurring in some studies since the early 1990s. Although the move to “gender” marks an important shift in epidemiological awareness, understanding the implications of “gender” on health — and especially the health-demoting consequences of gender oppression — involves more than replacing “sex” with “gender” in the text of an epidemiological manuscript. It involves understanding how sex and gender are different and gathering data that not only link women’s experiences of health to their reproductive organs and physiology, but also provide answers to questions such as: (1) how do gender norms regarding reproduction *per se* (e.g., pronatalist cultural norms mandating women to become mothers) affect women’s daily lives and well-being?; (2) what are the ills affecting women that are unrelated to their reproductive biology?; (3) how are women’s daily lives and well-being influenced by gender norms and expectations concerning femininity, masculinity, heterosexuality, and homosexuality?; (4) how are the health effects associated with sexism complicated by other aspects of women’s social identities, including race, ethnicity, class, nation, religion, and age?; and (5) how does gender inequality perpetuated by institutional structures (including those of biomedicine) affect women’s lives and health care?

However, such questions are rarely asked in contemporary epidemiological research on women’s health. As noted by Krieger et al. (1993, pp. 88–89):

Studies on the contribution of sexism — and not simply sex — to women’s and men’s patterns of health and disease, however, are a new phenomena. [sic] Until fairly recently, the predominant assumption has been that women and men have different health profiles because they are distinct biological sexes who differ essentially in their basic natures. According to this view, women and men have different disease risks not only because of differences in reproductive organs and physiology but also because of biologically determined differences in their social roles, which result in men’s and women’s exposures to different situations that can benefit or harm their health.

The narrowing of the epidemiological lens to this simple view of women as the “reproductive sex” is pervasive, and its negative consequences are manifold. First, women today continue to be seen as “controlled” by their reproductive physiology, although the discourse has changed from 19th-century Victorian notions of the frail and irrational woman with diseased ovaries and

hysteria-producing wombs to views of the 20th-century woman controlled by her sex chromosomes and female hormones. As Krieger and Fee (1994, p. 15) point out, this combination of sex chromosomes and hormones has been imbued with almost magical powers to shape human behavior in gendered terms; thus, “women [are] now at the mercy of their genetic limitations and a changing brew of hormonal imperatives”. The medicalization — indeed, psychopathologization — of such normal reproductive events as menstruation and menopause, including the creation of disease categories such as “premenstrual syndrome” and “estrogen-deficiency disease” (Martin, 1987; Lock, 1993), bespeaks the continuing tendency to see women as irrational, untrustworthy, and unfit for public duties by virtue of their unpredictable, even dangerous reproductive processes.

Second, the continuing focus on women’s reproductive biology means that “women’s health” is equivalent to “reproductive health”, while women’s non-reproductive health concerns (e.g., lupus, multiple sclerosis, hypertension, heart disease, strokes, occupational exposures, and violence) remain hidden from public view. The most glaring example of the neglect of a non-reproductive women’s health problem is cardiovascular disease, which kills half a million women in the US every year (more than twice the number who succumb to all forms of cancer combined) (Freedman & Maine, 1993) and which tops the list of disease burden (at more than 20%) for women aged 15 and above around the world (Stein, 1997). Yet, virtually all the major studies of cardiovascular disease — including the renowned US-based Multiple Risk Factor Intervention Trials (Mr. FIT study) — involved thousands of men and no women (Freedman & Maine, 1993). This glaring gender bias in research on cardiovascular health has certainly been partly responsible for the resulting gender biases in clinical decision-making, whereby men receive more diagnostic procedures and more aggressive treatment for heart disease (Freedman & Maine, 1993).

Indeed, many of the “hot” issues in women’s health in recent years — including adolescent pregnancy, low birth weight, diethylstilbesterol (DES) and vaginal carcinoma, toxic shock syndrome, unnecessary hysterectomies and cesarean deliveries, sterilization abuse, unsafe abortion and maternal mortality, and breast cancer morbidity and mortality — are all related in one way or another to women’s reproductive organs and reproductive potentials. Furthermore, women’s reproductive problems that are not directly fertility-related — such as cervical cancer, reproductive and urinary tract infections, and uterine and vaginal prolapses — have been relatively underprivileged in biomedical and public health discourse, despite the fact that these conditions may be a significant source of suffering for many women. Interestingly and by means of comparison,

there is no equivalent public health or biomedical category of “men’s health”,¹⁰ and the growth of a popular men’s health movement has clearly not developed around issues of men’s role in reproduction. In comparison, the two major global public health initiatives aimed at women — Safe Motherhood in the 1980s and Reproductive Health in the 1990s (Lane, 1994) — both remain quite narrowly focused on women as reproducers, whose obstetrical emergencies, unsafe abortions, fertility, infertility, sexually transmitted diseases, and other reproductive complaints, impede them in various ways not as *women* but as *mothers* or potential mothers. In other words, these well-meaning, but narrowly focused initiatives have ignored the social, cultural and political issues that determine, for example, whether a woman will be able to feed herself and her children, manage the constraints and stresses of multiple roles, and live without fear of violence and premature death (Koblinsky et al., 1993).

Third, the narrow focus on reproduction means that women on either end of the reproductive life span — i.e., girls and adolescents and postmenopausal women — have received little attention in terms of their health concerns and needs. The two “key issues” of adolescent and older women’s health in the US — namely, teenage pregnancy and menopause — can be shown to have been problematized not by women themselves, but by the public health and biomedical establishments in this country, for reasons that are both moral and material in nature. For example, anthropologists have recently criticized the Western biomedical model for its assumptions of universal, hormone-driven, negative physical and psychological conditions of menopause (Davis, 1996; Lock, 1993). Comparative studies of menopause cross-culturally reveal that menopause is a biological event which is also culturally constructed and shaped by power relations in the family, the labor market, and the global economy (Lock, 1993). Furthermore, although a “life-cycle” approach to studying women’s health has recently become popular (highlighting women’s reproductive health experiences as determined by age and biological timing), its predominant focus on biological events often ignores how the biological timing of these events and women’s experiences of them are shaped by

social aspects such as race/ethnicity, nationality, and class (Krieger et al., 1993).

Finally, because women are seen as reproducers and not producers of valued goods and services themselves, little attention has been paid to the health needs of women as workers, nor has consideration been given to the multiple roles women fulfill. Thus, housework, childcare, and family health caregiving — forms of unpaid labor that are inordinately shouldered by women around the world, even in the most egalitarian settings (Browner & Leslie, 1996; Colen, 1995; Mullings, 1995) — are not considered as forms of “work” with potentially deleterious consequences for women’s psychological and physical well-being (Jacobson, 1993). Furthermore, with far-reaching changes in the global economy, more and more women worldwide are entering the wage labor force (Freeman, 1999). Yet, the public health and biomedical establishments have only begun to assess the health-demoting consequences of women’s wage labor — including, *inter alia*, occupational exposures (Bale, 1990; Bertin, 1989; Dew, Branet, Parkinson, Dunn, & Ryan, 1989; Jacobson, 1993), stress-producing workplace “discipline” (Freeman, 1999; Ong, 1987), repetitive strain injuries (Reid & Reynolds, 1990; Reid, Ewan, & Lowy, 1991), and various forms of sexual discrimination and harassment on the job (Krieger et al., 1993) — or how these insidious “side effects” of women’s work affect both worker productivity and absenteeism.

In summary, the biological essentialization of women rampant in epidemiology, public health, and biomedicine in general has generated not only untoward views of women and their bodies, but also many “blind spots” in our knowledge of women’s health. Addressing these problems begins with an “opening” not only of knowledge systems but also of the epidemiological worldview and research priorities. Analytical epidemiology has a long history of moving “beyond biology” in its interest in the disease risks associated with all sorts of nonendogenous exposures (e.g., to environmental toxins, infectious agents), as well as human behavior (Inhorn, 1995). Indeed, epidemiology has proven that the context in which people work, live, eat, recreate, and procreate has profound implications for their health status. Obviously, this basic insight should apply equally to women as half of the population “at risk” from phenomena that have little, if anything, to do with their reproductive biology per se. In other words, if epidemiology can move beyond the narrow and limiting view of women as reproducers — controlled by their sex chromosomes, female hormones, and reproductive organs — then a whole world of discovery awaits epidemiology as it considers women’s lives in their totality and complexity.

¹⁰ Moscucci (1990) points to the unsuccessful attempts to establish “androgyny”, or the study of masculinity, in the 19th and early 20th centuries. However, the “physiology and pathology of the male sexual system simply were not seen to define men’s nature” (Moscucci, 1990, p. 32) in the way that women’s sexual systems were seen as defining women’s nature — at least those of white, socially and economically privileged women. Today, the study of men’s masculine sexual characteristics is designated to the specialized area of endocrinology.

Decontextualization and depoliticization of women's health risks

Finally, a problem that seriously compromises epidemiology as a theoretically generative discipline is its overarching disinterest in asking the tough “why” questions concerning the *context* in which relationships occur between discrete risk factors and disease outcomes. In fact, mainstream epidemiology literally “leaves off” at the point at which a relationship between a risk factor and a disease outcome is discovered; it poses none of the important conceptual and contextual questions about why risk factors occur in the first place, how they are socially distributed among individuals and groups, and how social, political, and economic factors generate and maintain risk in certain environments (Inhorn, 1995; Turshen, 1984; Wing, 1994). Without this sociocultural and political-economic contextualization, explanations of why particular diseases affect particular individuals and groups at particular historical moments will remain obscure (Krieger et al., 1993; Trostle, 1986; Turshen, 1984). Furthermore, while epidemiologists often fear the “ecological fallacy” — in which erroneous estimates of individuals’ behavior or risks are made on the basis of population-based data — a less recognized problem is the “individual fallacy”, in which the larger social context is ignored by virtue of only examining individual cases (Brown, 1997). The net result is an individualizing of disease risk, often accompanied by victim-blaming. Yet, individuals are often seriously challenged in their abilities to reduce disease risk, for they face external forces, including, *inter alia*, poverty, unhealthy living environments, inflexible gender norms and hierarchies, poor health care, governmental neglect, or political involvement in their lives (e.g., state policies, military conscription, the presence of police states, civil unrest and warfare) that may make risk reduction and prevention impossible. As noted by Krieger and colleagues (1993, p. 109):

To understand and ultimately prevent inequalities in health associated with social inequalities, we must be guided by the ‘why’ questions of explaining population patterns of disease, not simply the ‘how’ questions regarding the mechanisms of disease causation. For research to set the basis for effective disease prevention policies, it must address the structural determinants of health, not simply factors labeled as individual ‘lifestyle choices.’ Continuing merely to catalog individual risk factors from an amorphous ‘web of causation’ no longer can suffice. If our goal is to alter the web rather than merely break its strands, it is time to look for the spider.

Similarly, alternative epidemiologist Wing (1994, p. 84) has cautioned that current global public health crises

demand more than a “piecemeal approach”, and that “an epidemiology oriented towards massive and equitable public health improvement requires reconstructing the connections between disease agents and their contexts”.

The need for understanding disease agents in social, economic, and political context — or, to use Krieger’s metaphor, understanding that a spider lives in the middle of a web — has perhaps never been clearer than in the case of the global AIDS pandemic. Yet, AIDS — a disease inordinately affecting women worldwide and thus worthy of an extended discussion in this essay — provides *the* quintessential example of a case of epidemiological decontextualization and depoliticization.

For the first decade of the epidemic, AIDS was not considered to affect women, because of a narrow epidemiological definition of the disease, which restricted it to gay men, hemophiliacs, Haitians, and IV drug users (Farmer et al., 1996). When the epidemiological community eventually recognized that women were susceptible to HIV infection, their self-inflicted “behavior” — e.g., as prostitutes, IV drug users or partners of drug users — was emphasized as the key to disease risk. Only now, after more than two decades of experience with this epidemic, have researchers begun to capture the social context in which the AIDS epidemic has unfolded among women around the world. These researchers — coming not from the epidemiology/public health community, but rather from the social sciences (e.g., anthropologists Paul Farmer, Brooke Grundfest Schoepf, Elisa Sobo, Priscilla Ulim, and many others listed in the bibliography of Farmer et al., 1996) — have emphasized the ways in which poverty and gender discrimination serve as major risk factors for AIDS among women and their children, who constitute the fastest growing core of new cases. More specifically, women who are economically dependent upon men for support of themselves and their families, and/or who live in pronatalist societies characterized by marked gender asymmetries, are unlikely to be able to protect themselves from HIV infection through the “negotiation” of condom use with unwilling partners. Thus, the “risk” of HIV infection in women involves much more than individual women having unprotected sex for no apparent reason — as the epidemiological model of AIDS risk would suggest.

In order to understand *why* so many women around the world engage in this “risky” behavior, we need to understand how systems synergistically generate inequality and how inequality structures AIDS risks and burdens. For example, in Haiti, historical and transnational political and economic forces set the stage for rapid transmission of AIDS there (Farmer, 1992). The violent penetration of early European capital and neocolonial links to the US contributed to

“underdevelopment”, rural poverty, migration to urban centers of industry and wage labor, unemployment rates of up to 70%, international tourism and prostitution, and social disintegration (e.g., the instability of marital unions) (Farmer, 1992). These are factors which increased women’s burdens of caregiving for youngsters and elders and affected women’s survival strategies concerning multiple partners and commercial sex work. Ultimately, it affected Haitian women’s risk and susceptibility to HIV infection (Farmer, 1992). As this example demonstrates, context is all important, and the Haitian context bespeaks multiple forms of oppression, based on gender, race, class, and global location, which women confront and deal with often at great costs to their health and well-being.

Indeed, creating a truly feminist-informed epidemiology would involve a political commitment to identify and end the multiple forms of oppression confronting women in Haiti and elsewhere around the globe. Such an emancipatory approach arises from the understanding that women everywhere, as gendered beings, face some form of oppression and exploitation, which may be deleterious to their health. As in the AIDS example, gender oppression is typically not an isolated axis of domination, but is part of interlocking structures of oppression formed by destructive social divisions and hierarchies, which include race/ethnicity, class, religion, sexual preference, age, physical abilities, and national location in the global order (Mohanty et al., 1991). These hierarchies construct and maintain each other, supported by similar institutional structures and shared notions of difference, superiority, and the right to dominate (Lorde, 1984). Thus, a truly feminist epidemiology would involve a commitment to identifying and ending the deleterious health consequences for women brought on by multiple forms of oppression, including those interwoven with gender. The ultimate goal would be a feminist-informed epidemiology committed to the radical goal of transforming society for the improvement of every woman’s health and well-being.

Creating a feminist epidemiology

Having spelled out a number of antifeminist biases in epidemiological studies of women’s health, we conclude this essay with a hopeful exhortation to all epidemiologists: Namely, a call for the development of an emancipatory, feminist epidemiology that is perceptive of and responsive to the great diversity of women, their multiple forms of oppression, and the breadth of their health needs *as they themselves define them*. The theorizing of Euro-American women of color (a.k.a. black feminists) (Collins, 1991; Hooks, 1981, 1983, 1994) and that of third world feminists living in “developing” countries shaped by colonial legacies (Mohanty et al.,

1991) informs our feminist approach in this proposed reconfiguration. Euro-American black feminists and third world feminists, perhaps more than other types of feminists (e.g., liberal, radical, Marxist, and post-modern), have been concerned with overcoming the multiple, interlocking, and simultaneous forms of oppression based on gender, race, class, and nation which many women face worldwide. Third world feminists in particular have emerged at the center of women’s health politics and debates as they have struggled against the effects of late-20th-century globalization, including recessions, structural adjustment policies, new divisions of labor, environmental degradation, and the multinational exportation of hazardous industries and technologies (Doyal, 1995).

Euro-American black feminists have directed their efforts in a slightly different direction, challenging, in part, the Eurocentric, masculinist knowledge creation process, in which “elite white men and their representatives control structures of knowledge validation” (Collins, 1991, p. 201), including scholarship in biomedicine, public health, and epidemiology, where “white male interests” prevail, as shown above. Black feminists argue instead for an Afrocentric epistemological approach that may lead to a significantly enriched understanding of “how subordinate groups create knowledge that fosters resistance” (Collins, 1991, p. 207). Epistemologically similar in some respects to the popular epidemiological approach forwarded by Brown (1992, 1997),¹¹ black feminists call for new forms of knowledge production capitalizing on four important elements: (1) valuing of women’s experiential knowledge and wisdom, including how race, gender, and class oppression are “lived” and “survived”; (2) using dialogue in assessing knowledge claims, including traditional call-and-response discourse modes common in African-American community gatherings; (3) implementing an ethic of caring, in which personal expressiveness, emotions, and empathy are central to the knowledge validation process; and (4) implementing an ethic of personal accountability, in which a researcher’s personal biography and politics are considered highly relevant to the knowledge validation process.

Drawing from these third world and black feminist approaches to theory, methodology, and epistemology, a feminist epidemiology would proceed from three important assumptions. First, feminist epidemiologists would recognize that women occupy simultaneously diverse locations and identities, which shape their experiences, their struggles, their resistance strategies, and their power and strengths (Collins, 1991; Mohanty

¹¹ See also Stein’s (1997) interesting discussion of “feminist participatory-action research (PAR)”, which derives from the empowerment theories of Paulo Freire and feminist methodological critiques.

et al., 1991). From this perspective there can be no universal category of “women” who are oppressed by the same patriarchal institutions and who share identical experiences, interests, desires, life courses, and health concerns and outcomes (Mohanty, 1991). Although most women share similar biological events (e.g., menstruation, birth, lactation, menopause) which affect their health and well-being, women will often differ dramatically in how they experience and create meaning from these events, which is highly dependent on their social locations in space and time (Martin, 1987).

Second, as a truly feminist project, a feminist epidemiology would draw upon both popular epidemiological and Afrocentric epistemological approaches in order to develop new methodological and theoretical strategies that privilege four important elements:

- (1) the active engagement of women themselves in the epidemiological knowledge production process; this will involve women “talking about their health”,¹² defining their own health problems, and being actively *listened to* by feminist epidemiological researchers committed to empathic engagement in the lives of those they study;¹³
- (2) the documentation of women’s diverse experiences of illness and health, based on the multiplicity of women’s global locations, social and cultural identities, interests, and experiences as both reproductive and *non-reproductive human beings*;
- (3) the evaluation of how gender oppression, as well as other interlocking forms of oppression that shape women’s daily lives, is itself detrimental to women’s health; this will require forging new methodological approaches to show how *gender oppression* — as opposed to an uncomplicated epidemiological variable of *gender* — shapes women’s health outcomes and well-being (Krieger et al., 1993); and
- (4) the connection of women’s local lived experiences of health and illness and the various forms of oppression they encounter to larger *social, economic and political forces*.

Finally, a feminist epidemiology would require a personal commitment from those of us engaged in the production of epidemiological knowledge and policy to

¹²Medical anthropologist/epidemiologist Robert Hahn (personal communication) has suggested the need for a large-scale, US-based study in which women are given an open-ended opportunity to simply “talk about their health”. From the standpoint of US public health and epidemiology, such a study has never been conducted. Instead, women’s health problems are typically defined in a “top-down” fashion by those in the biomedical/public health communities.

¹³Anthropologists have historically advocated long-term, empathic engagement in the lives of those they study.

unmask relationships of domination in our professional and private lives as part of our life’s work (Maguire, 1996). This means examining how we and our research institutions are implicated in relations of domination and accepting responsibility for the ways gender/race/class/nation shape our own social locations. It also requires us to create new structures and relationships to replace the hierarchical ones in which we may wittingly and unwittingly participate.

If we are to take the aforementioned set of assumptions seriously, then a feminist epidemiology is about creating (1) alternative research structures that critically challenge the dominant, hegemonic production of epidemiological knowledge; (2) new theoretical frameworks that analyze historically and globally important gender, race, and class relations and the political and economic structures in which these relations are embedded; (3) grass-roots, activist agendas for examining and solving women’s self-defined health problems, as well as liberating women (and all human beings) from unequal and unjust social hierarchies that promote and maintain ill health; and (4) professional and personal accountability for academic and health institutions that leave unchallenged and intact oppressive structures, including those interwoven with gender (Barroso, 1994).

Thus, the goal of the emancipatory feminist epidemiology that we are describing involves much more than just adding women or other marginalized groups into already existing paradigms for clinical trials, cohort studies, epidemiological surveillance systems, and other ways of studying patterns of health and disease among populations. And it goes well beyond convincing practitioners of conventional, mainstream epidemiology to recognize the value of interdisciplinary linkages and qualitative data in adding dimensions of context and meaning to their quantitative studies. Although these are important goals in and of themselves, they are not sufficient for the development of a new feminist epidemiological paradigm. Instead, an emancipatory feminist epidemiology demands a critical rethinking of the very ways in which “women”, “gender”, “oppression”, and “health” are ultimately conceptualized, studied, and linked to social policy. Only through such a radical rethinking can we begin to envision a feminist epidemiology that means research *for* women rather than *on* women, and that is responsive and ultimately beneficial to women’s lives, as well as the lives of *all* members of society.

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