Editorial
Epidemiology's Role in the Creation of a Humane World: Convergences and Divergences Among the Schools

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EDITORIAL

EPIDEMIOLOGY'S ROLE IN THE CREATION OF A HUMANE WORLD: CONVERGENCES AND DIVERGENCES AMONG THE SCHOOLS

JAIME BREILH

This plea for changes in the way epidemiology is practiced presumes a progressive spirit among many readers, sharing a desire and in a position to serve humanity. The criteria used to begin this study of our role in the development of epidemiology is not simply a matter of technocratic formulae, but is based, rather on a committed point of view about the human dimension in the development of epidemiology. The aim is to generate propositions that will eliminate processes that destroy and threaten human life, promoting, instead, supportive measures and processes to protect society, the family and the individual.

An epidemiological reading of contemporary history demonstrates that human life is built 'under fire'. The quality of life and health is forged in the midst of a permanent struggle between private interests and collective needs; in modern terms, between the urgent drive toward economic and political expansion and the needs of ordinary people to build a safer world in which everyone works in solidarity. In response to the needs of these poles, cultural patterns have emerged together with schools of scientific and technical thought that attempt to explain the world and define the direction society should take.

Epidemiologists make decisions in the context of the situation described. There is a refusal to isolate ourselves in a lesser, technological world, a desire to open our minds and place our skills at the service of movements and social organizations dedicated to the building of more humane and just societies. We wish to ensure that progress is no longer defined in terms of corporate productivity, monopolistic competition and the technological advances of an élite, endorsed by a dominant paradigm that might be characterized as 'business, patriarchy and a single culture,' a model that has favoured, in its extreme, the private greed of powerful interests while, to paraphrase Benedetti, collective needs and human values have been practically forced into hiding.

WHAT IS THE ESSENCE OF BEING HUMAN?

Equity, justice, well-being and health, issues at the heart of the practice of epidemiology, are the bases of a new, more humane and democratic society. An increasing number of voices are being raised in favour of a more practical science oriented toward human beings, one that emphasizes working with people. Social movements and groups are demanding forward-looking research joined to practical applications. In meeting these demands, the people's perception of their needs, their material situation and their subjective constructs must be taken into account. This approach calls into question epidemiological research limited to an academic understanding of determining factors ('past') that produce the present situation in terms of the health of the collective and posits ways to work for a better future.

Historical determinism has lead to excesses and distortions, both speculative and divorced from the feelings and experience of the people; this type of historical determinism is able to formulate objective explanations of reality and describe the general shape of the future, but fails to recognize concrete conditions for actions. Care is needed to avoid putting scientific knowledge at the service of objective efficiency alone.

Criticism of these excesses should not lead, however, to a questioning of the historical determinism of the health of the population, nor the power of utopias to mobilize the people.

That which is human might be defined as the presence of certain essential conditions without which discussion of the real humanization and oft-mentioned equality of life are impossible. These essential conditions include:

- The creation and proliferation of cooperative ways to work in solidarity, ways that are creative, good for body and soul, culturally enriching, leading to the production of goods equitably distributed, goods that are safe and that promote health.
- The humanization of processes of production, selection and use of those things which fulfil basic human needs is another way to safeguard and promote human life.
- Universality is another basic characteristic of what it means to be human. This is expressed on two levels; the power to transform natural resources on this planet and beyond into elements that will fulfil our needs; and the growth of a peaceful, constructive nexus among ethnonationalities in order to create pluricultural, diverse, tolerant, profoundly interconnected societies.
- The socio-historical character of what is human frees people from strict subordination to instinctive natural conditions. Human life grows and develops as a collective process, essentially, in which the conditions of production, political organization and cultural growth, all collective processes, serve as a framework that determines involvement in extending or limiting the possibilities available to human beings. The measure of a people's development is the access the majority has to the services society provides.
- Solidarity, an essential characteristic of what it means to be human, follows from the above. It is radically opposed to the destructive competitive spirit and the move toward privatization. Monopolistic forces accentuate inequalities, favour the control of the powerful and continue to divide in order to rule. The greater the degree of solidarity people achieve, the greater their development will be.
- What it means to be human is also characterized by the capacity to develop an objective consciousness and a free subjectivity in relation to the real world. People achieve development as they master different kinds of knowledge (popular empirical knowledge, wisdom or behavioural experience, cultural forms, language and beliefs, as well as scientific learning and philosophy) and also as they evolve subjectively (in terms of their ability to dream, to hope, to call on psychological resources to manage the tension between the generic and the individual, to use symbols and systems of representation and imagination).

- Freedom is another basic element in what it means to be human. But it is important to differentiate between formal kind of liberty, apparent or limited, found in the restricted democracies of presidentialist and authoritarian regimes, and the profound concept of liberty linked to human potential.
- Finally, human development occurs as societies and the individuals in them achieve patterns of conduct that respond to the social order, that subordinate those of a purely natural order, leading to a cultural symbolic order where there is room for affectivity, respect and higher creativity, all of which are the raw materials from which human organization is created, a type of organization that safeguards its members and is based on solidarity.

Whether or not human development will be achieved and appropriately directed depends upon what use is made of the various kinds of power: economic power (property and the use of material and cultural goods), political power (the ability to come together and to mobilize), scientific-technological power (the ability to generate, have access to and utilize knowledge and information), cultural power (the capacity to influence the formation of the collective subjectivity) and administrative power (the ability to manage the other components of power effectively). Human success is not an option for a collective body whose labour organizations, social movements and natural political organizations are not fully empowered.

THE CHALLENGES EPIDEMIOLOGISTS FACE

Epidemiology is practised in a world founded on inequality and aggression, that is, on the implacable law of the powerful.

Is there no safe place within epidemiology for those promises of equality that are embedded in the collective memory of our peoples? Are we to settle for indirect, purely professional contact with the urgent needs of society? Is there a substantive contradiction between technical work well done and critical practice? Is the painstaking, disciplined cultivation of science in some way at odds with a militant determination to humanize our work?

Like professionals in other fields, epidemiologists face a challenge that involves furthering the 'external' activities of their science and improving its 'internal' structure.

Epidemiologists must become a creative source of support for attempts to safeguard and advance the interests of the collective, free themselves from every trace of dogma, adopt a cautious and selective position in the face of offers of political hegemony as well as the array of technological merchandise on offer. The present situation requires epidemiologists to satisfy four social priorities, whether they are working within or independently of the state. On the basis of the dictates of strategic demands and the spheres of influence controlled by social movements and organizations, epidemiologists should: (1) act as 'witnesses for the prosecution' in relation to processes that destroy the health of the people, (2) become more effective monitors, permanently and critically, of the quality of life and the factors necessary for health, (3) become an instrument to support the spread of popular democratic power through effective three-way, decentralized, shared leadership to solve urgent problems (representatives from social movements and organization, from democratic government institution and from circles of intellectuals fully involved with the people) through assisting the formation of a new popular subjectivity and (4) act as agents for the strategic planning of innovative human development projects.

It will be difficult to achieve these goals if epidemiologists do not change their field from within, including its basic concepts, its methods of interpretation and the type of instruments it uses.

The principle challenge in our search for equity involves a decision as to the areas in which the struggle for equity should take place. The following are some goals around which we might make a united effort:

(1) Humanizing work and safeguarding and promoting the health of the working population.
(2) Working to create conditions for safe and beneficial consumption through demanding that all human beings be fully secure in their access to an adequate diet and to social safety nets, including health care (the enjoyment of human rights should not depend upon income or the ability to save).
(3) Developing and protecting the environment; this includes in-depth toxicological studies and the use of biotracers to determine the effects of pollution on social reproduction patterns and the geno-phenotypical susceptibility of urban and rural populations to the harmful effects of contaminants.
(4) Protecting and aiding at-risk populations (determining the epidemiology of problems experienced by specific groups), those most vulnerable within our social systems (senior citizens, youth and children).

We must create conditions which will allow the 'actors' in epidemiology to 'converge' in order to solve high priority problems through the application of better concepts and techniques, and to achieve the 'cross fertilization' of experiences acquired from those in the various currents.

It is true that members of the advanced epidemiological movement identify with different tendencies. But this diversity should not be a cause for concern; rather, it should be viewed as an opportunity. What is worrying is the lack of contact among practitioners of the various tendencies. Although the efforts of epidemiologists appear complementary, sharing a common desire to safeguard health and to work for progress in technical areas, our fields have developed in mutually unrelated ways, as if these were parallel or even conflicting areas of expertise, isolated by prejudice, defensiveness, arrogance and the inability to find ways to unite in order to work for the good of society.

The most perplexing consequence of the resulting tension is a comprehensive weakening of new lines of epidemiological thought, practice and research; instead of working together, we raise unnecessary obstacles to the cross-fertilization referred to above.

THE SOUTH–NORTH RELATIONSHIP IN EPIDEMIOLOGY

People who live in the South wrest scraps of life from between the cracks of an ultra-monopolized world, struggling to survive; and there are even people in the so-called developed world who are experiencing suffering and inequality, whose lives are in stark contrast to the surrounding abundance.

Apart from feelings of solidarity that motivate a large sector of progressive Anglo-Saxon and European intellectuals confronted with the problems of Latin America, it is obvious that members of the 'developed' world's scientific communities view their colleagues from the South with disdain.

For historical reasons that cannot be analyzed here, the problem has become worse with the new wave of xenophobia sweeping the globe. This tendency affects scientific thought and creates conditions for segregated behaviour in the academic community, thereby reinforcing barriers to cooperation between the North and the South. A clear sign of this phenomenon is the resurgence of discredited scientific theories on race used to justify inequality. These theories are not the patrimony of ultranationalistic sects, but appear in detailed form in scientific works like the controversial book *The Bell Curve* by Hermstein and Murray [1].

The real cause for concern, however, is not the widespread popularity of this type of anti-human, xenophobic, pseudo-scientific argument, but is the fact that this type of scientific position finds a propitious cultural environment in which to flourish. Our field has its own logic and its own problems but its characteristics do not protect us from the dangers involved in replicating inequitable conditions that operate on scientific thought like true "epistemological obstacles," to use Bachelard's term [2].

I refer to the absence of real contact between North and South, and to the difficulty for fair and honest scientific collaboration between equals, two situations produced by the systematic underestimation of Latin American epidemiological thought by our Northern colleagues. To borrow a term coined by the feminist movement, Latin American producers are almost "invisible" in the best places in North America and Europe. I do not refer to those rare cases of Latin Americans working out of context, in the so-called first world, indistinguishable from their colleagues. I refer to an almost Olympian ignorance of books, work, instrumental innovations generated in the heart of Latin America. There is a lack of serious effort to learn about our ways of doing things and our experience.

A recent example of this disconnectedness and asymmetry is found in a paper of North American Nancy Krieger, encouraging for those of us who practice epidemiology on different shores [3]. The paper contains an analysis of both the lack of a theoretical basis for a "multicausal network" and the epidemiological production of the North. This penetrating article appeared, however, two decades after similar papers were produced by researchers in Brazil, Ecuador and Mexico, papers barely mentioned in passing in the work cited.

I would like to point out an epistemological fact inherent in this matter, and that is the lack of contact that needs to be corrected. We need to begin to work in both directions: North–South and South–North.

Differences between our worlds are due not to talent or the capacity for work, but to a fact discovered by the science of science. In specific contexts, development of research goals occurs in different degrees, and distinct historical conditions make it easier to visualize some problems and harder to visualize others. Clearly, another important difference between the wealthy North and the impoverished South is the disparity in funds available for science, a fact well understood by political economists.

If we join forces, we can make a more profound, useful contribution to the development of an equitable epidemiology. We need the collaboration of the North, with access to the massive body of knowledge gathered there and, above all, to the technological experience available there. But we also have a great deal to offer both in the search for the 'spider in the web' and in terms of the valid epidemiological instruments we have developed and the rich experiences we have accumulated in the building of participatory management models.

The current globalization of the world's economy implies an expanding hegemony that assumes gradual elimination of different points of view and ways of looking at the world, both in popular culture and in other cultural and scientific arenas.

The age of electronics, virtual analysis, information superhighways, multimedia resources, when taken over by monopolistic forces, does not lead to that "global village" McLuhan prophesied, interconnected yet rich in diversity, but, instead, to the "global supermarket," in the words of Regis Debray, where each step toward economic unity implies a step backward in terms of culture, a spiral of polarization where technology requires uniformity of vectors and the content of communication. The tendency toward uniformity destroys cultural diversity, eliminates the possibility that different opinions will circulate, creates a world in which the cultural expressions of the "powerless" are forced to seek protection in fundamentalist positions or are relegated to ghettos of marginal consumption [4].

In epidemiology something similar could occur. Our concern should be that technological growth does not silence the epidemiological production of weaker countries with underprivileged populations and that the promises of epidemiological contributions they propose, should not be rendered null and void.

PROBLEMS OF AND POSSIBILITIES FOR CONVERGENCE

Innovative epidemiological thought develops from three different methodological positions: (a) the school most closely linked to dynamic linear and non-linear systems (mathematical modeling or model fitting), (b) the school related to knowledge of microsocial processes (anthropology, qualitative content analysis techniques) and (c) the school linked to the use of categories to study structural and superstructural processes (political economy and sociology).

We must consider the characteristics and possibilities of the contributions of each of these currents and guarantee each a place in an open debate in order to discover to what extent conflicts are the result of frankly contradictory positions and to what extent divergences that seem to be irreconcilable in theoretical and technical terms turn out, in a more democratic setting, to be the result of an inability to master and integrate, or to 'triangulate,' the techniques of different fields, the product, in other words, of political fragmentation that isolates the work of progressive forces and blocks discussion of unifying proposals for collective action integrated into a human-centered, popular project for society.

Detailed discussion of methodologies is not possible here, but these are discussed in depth in *Nuevos Conceptos y Técnicas de Investigación* (*New Research Concepts and Techniques*) [5].

It must be stated from the outset that our progressive efforts are not compatible with narrow positions within philosophically conservative theoretical frameworks. Specifically, I am referring to what might be described as the empirical–analytical neopositivist line which blindly insists on inductive research centered on formal mathematical reductionism within a static ahierarchical causality. Those who subscribe to this school do not join principles that promote life within society and the health process with formal expressions subject to study by mathematical models; instead, they convert those models into the predominant and sole source of knowledge, a practice that leads to a rigid empirical Cartesianism. This stance, criticized by Naomar Almeida Filho, from Bahia, in a recent electronic communication, condemns us to an "excessively limited view of a complex reality, as if non-linearity and fractalism were the only expressions of the complexities of epidemiology" [6].

The errors inherent in this school of thought include an heuristic view of knowledge according to which what matters is not to explain and understand but to make pragmatic predictions on the basis of the isolated phenomena of the model. Oquist, the epistemologist, describes the consequences of this sort of amorphous as historical pragmatism, isolated from the organic processes of the collective [7].

On the other hand, work that is entirely anti-realistic has very little value. This type of effort, subjective to the core, lapses into psycho-cultural reductionism rather than relying on objective observation of processes, and introduces an individualized hermenoutics which insists that reality can only be understood on the basis of intuition and subjective constructions; the end result is that those who follow this line of thought make no attempt to change the world but merely to reconstruct it in their own minds [8], (p. 12).

There is, however, an important vein of interdisciplinary collaboration based on recognition of the objective reality of society and health. Those who subscribe to this approach

maintain that social processes—epidemiological ones included—cannot be reduced to the simpler biological and individual spheres of reality. The multidimensional, complex character of reality comes about in a relationship that is essentially dialectical; collective and individual processes of domination, together with social and biological bonds, do not develop through a process of linear and mechanical causality but as a result of different kinds of movement that are hierarchical and that obey different determining factors (contradictory self-movement, causation, reciprocal action of feedback systems, probability and chaotic determination).

Specific contributions that might be integrated to provide a better understanding of biosocial and sociobiological realities, as well as a better understanding of the genophenotype, range from key works by Levins and Lewontin [8] in dialectical biology to the more precisely oriented efforts by Latin American researchers working on concrete aspects of historical determination in biology. The latter include the reflections of Uruguayan researcher Penchaszandeh on genetics [9], studies by Cubans working at the Institute of Labor on physiology, stress and social conditions and contributions to the reformulation of social determination on infant growth, such as those by Brazilian Elizabeth Tunes [10]. In addition, a work by psychologist Thomas [11] presented an innovative vision of the part social affective (semantic symbolic) characteristics play in the configuration of the phenotype, a matter that may have great importance in psycho-epidemiology. Thomas' methodological statement consists of two central points: the essential unity, movement and contradictory character of the method in relation to the same characteristics of the object and the diversity of triangulation techniques in relation to the spatial domain of the object.

As I have stated on other occasions, I believe not only in classic statistical instruments linked to the usual dynamic systems (such as contingency analysis, variability, correlations between linear and logistical regression such as factor analysis), but also in more 'modern' mathematical resources such as multiple level models or linear hierarchies (that permit structures of data or group patterns instead of individual factors) and chaos analysis (to explore the fractal behavior of some health processes).

The possibilities for contributions in the field of intensive-participatory techniques are enormous: these include efforts which question the limitations of broad procedures or Thiollent-type surveys and also those aimed at recovering the wealth of contributions from anthropology and participatory proposals for epidemiology. In this regard, and going beyond classic works like those of Pêcheux [12], Bertaux [13] and Ferrarotti [14], is the vast contribution of a group of eminent Latin American social scientists who have revived what have been erroneously called 'qualitative techniques.' In the health field there are very important works, both in the general area of explanation and teaching, such as those of Cecilia Minayo [15], and recent works by Colombian Gabriela Arango dealing with the specific application of these techniques to the understanding of epidemiology [16].

THE LATIN AMERICAN SCHOOL: THE PROBLEM OF OBJECTIVITY AND SYMBOLIC EFFICACY

It seems to me that our greatest weakness is not the lack of objectivity we bring to our work but the lack of what Debray [4], (p. 5) calls "symbolic efficacy," or what Bertrand [17] has called the need to be subjectively efficient in order to be able to be socially efficient.

To that end, it is indispensable that we become increasingly creative, and strengthen our organization and communication networks, in an attempt to bring the discussion of Collective Health closer to the daily lives of collective groups and to the social and political practice of general health personnel, as well as to those areas where power is being used in a democratic fashion.

We urgently need to think aloud about how to set to work seriously and we also need to avoid that 'light' academicism that would put us on Benedetti's list of those condemned for their lack of passion, because "they understand what is happening but all they do is wring their hands..." thus revealing "the fragile democratic balloon we have become ... serene, objective, but with an objectivity that contributes nothing" [18].

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