On the Concept of Health and Disease.
Description and Explanation of the Health Situation

In the last 10 years the controversy over the concept of health and disease has been revived in some Latin American circles. It appears to us that three fundamental facts have contributed to this:

a. At the World Health Assembly of 1977 (WHA Resolution 30.43)**, the representatives of the Member Governments agreed that their main social goal and that of WHO should be to have all the citizens of the world reach a level of health by the year 2000 that allows them to live a socially and economically productive life (HFA 2000), and in the subsequent Declaration of Alma Ata (1978) it was emphasized, with the commitment of the governments of almost all the countries of the world, that primary health care was the road to these objectives, as part of an overall development with a spirit of social justice**. In 1980 in the XXVII Directing Council of PAHO, the Governments in the Region of the Americas agreed on Regional Strategies and Objectives **, establishing precise goals in terms of overall mortality and life expectancy at birth as well as total coverage of immunization, drinking water, disposal of excreta, and provision of medical services for all population groups. At this last opportunity it was also given for primary care to be conceived as a strategy of transformation of the health care model in relation to the criteria for efficiency, effectiveness, and equity and as the set of intersectoral actions oriented to the transformation of living conditions, especially of the "marginal" population groups.

This set of definitions and commitments, universally accepted as normative, has posed, to those who work in the health field, limitations on the theoretical and methodological bases traditionally utilized and has shown the need for new developments, that make it possible to treat the health and disease problem as an expression of the living conditions of different population groups and to understand the relationships between these and the most general social processes **.

b. One of the consequences of the economic crisis and the foreign debt of the Latin American countries has been a deterioration of the living conditions of most of the population groups and, at the same time, a trend toward a substantial reduction in the per capita expenditure on health and on social projects by the official sector ** with the consequent progressive transfer of the costs of the services and
programs for health to the family budget.

In this context it has become increasingly evident that the goals of HFA 2000 and the objectives of the strategies of primary health care can be attained only with difficulty for most of the population, in most of our countries, unless substantial changes occur in the general social policies. In this manner a growing HEALTH DEBT is accumulating which weighs on the population and the rulers as the social costs of servicing the financial debt. All this has contributed to weakening the legitimating power of the health care model, generating the need for proposals to restructure and change the health policies in the technical field.

c. In the framework indicated, the questioning of “normative planning” in health, which has remained reduced to simple formal dimensions in many of the Ministries of Health and Social Security institutions, has become more forceful. Opportunities have opened up for the development of “strategic thinking in health” —previously restricted to academia or the political opposition—as tools that promise to be more useful for the daily management of institutions and programs in situations of shared power and power scarcity. These “new” developments in planning and management require more comprehensive conceptualization of the health phenomena with greater explanatory power.

Epidemiology has as its study object the health and disease problems from a population-based perspective, population groupings, at the level of social groups. These levels cannot express themselves merely by the sum of individual processes; at the same time they are expressed, not only at the group level, but also at the level of the individual.

Traditional conceptions of health and disease have had to allow for the confrontation with more comprehensive conceptual and methodological developments, with greater capacity to apprehend the real complexity of the determining processes, to go beyond the simple unilateral vision, to describe and explain the relationships between the most general processes of society and the health of individuals and social groups. At the same time this represents the challenge to demonstrate that these developments really have a greater potential for mobilizing power resources related to obtaining favorable changes in the living conditions and health profiles of different population groups and for being articulated with the developments of strategic thinking in health and strategic planning that would permit greater efficiency and effectiveness in health actions.

The Health Situation

The description and explanation of the health and disease situation are not independent of who does the describing and explaining and from which position. In this way all descriptions and explanations are those of an actor in a specific situation. This is a central point in order to understand why specific conceptions predominate and how they are modified. Although the way the phenomena are perceived has the power to mobilize social forces, it is those forces, the actors, that develop and promote them according to their social effectiveness with respect to their purposes, whether these are social or technical and scientific projects. The confrontation of concepts, theories, methods, and techniques is thus one of the areas for conflicts and consensuses among social actors. The predominance of a form of thought is not only a function of its greater abstract explanatory power, but also of its greater explanatory capacity from the point of view of those who have the power to make their projects predominate. However, given the heterogeneous character of our societies, especially in circumstances of shared power, the HEGEMONY of those ideas is also a function of their potential to respond to the phenomena from the point of view of other social actors, and to “demonstrate” superiority on the technological realm in face of other forms of thinking. The legitimation of a body of thought thus requires the accumulation of power on the one hand and, on the other, its development, not only methodologically, but also technologically. Thus it should have the capacity to assume the entire previous scientific and technical development, redefine it, and exceed it at a higher level of efficiency and effectiveness. Occupying space and accumulating power, with more advanced thinking on health and disease, therefore suppose not only the theoretical coherence and strength of that thought, but also a technical capability higher than that of the thinking that there are aspirations to overcome and a greater capacity to respond to the health problems of all the social groups—not only those that we perceive as important, but also those that are perceived as important by other social actors, especially by those whose bidding for power is necessary for the development of general and health projects, that we assess positively.

A health and disease situation, from the point of view of a social actor, contains:

a. A selection of problems, phenomena that affect selected population groups.
b. An enumeration of facts whose content and form
are assumed to be relevant (sufficient and necessary) to describing the selected problems.

c. An explanation, that is, the identification and perception of the web of relationships among the multiple processes that produce the problems in the different levels and spaces.

The “health situation” of a specific population group is thus a set of health “problems,” “described” and “explained” from the perspective of a social actor, that is, “someone” who decides on a specific behavior in relation to that situation.

**Definition, Description, and Explanation of Health and Disease Problems**

The events that we perceive as health and disease phenomena occur in different dimensions. They can be **singular** variations (movements, flows of events) among individuals or populations grouped according to individual attributes; they can be **particular**—variations among social groups in a single society and at a single given moment (groups that differ in their objective conditions of existence), or they can be like **general** movements, flows of events that correspond to the society in general, globally. In this way the health problems can be defined as such in some of these dimensions (see diagram 1).

These problem dimensions are matched with different “spaces” of determination and conditioning; the problems are not only defined in different spaces, but also explained in different spaces. The way a problem is defined delimits the space for explanation utilized by the actor. Thus, when an actor defines a problem in the singular space he will be utilizing as an explanation the forms of accumulation (organization) and the laws and principles at the level of the singular—of “singular judgments”.

Its explanatory power is limited to the uniqueness of the phenomena and its power to transform the problems is limited to the technological possibil-

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**Diagram 1. Explanation of health problems.**

<table>
<thead>
<tr>
<th>SPACES (determination conditioning)</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
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<tbody>
<tr>
<td>PRINCIPLES RULES AND LAWS</td>
<td></td>
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<td>ACCUMULATIONS ORGANIZATIONS</td>
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<tr>
<td>FLOWS OF EVENTS</td>
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**1. GENERAL** (Global)

**2. PARTICULAR** (health of a population group)

**3. SINGULAR** (specific problem)

**DETERMICATION CONDITIONING**
ities that it had developed within those limits. When a problem is defined in the particular space, as a profile of a population group, the actor has at his disposal the explanatory power of the accumulations, laws, and principles that explain the process of social reproduction of the objective conditions of existence of different population groups, and his technological capacity, in addition to those developed in the singular space, will incorporate the entire arsenal that makes it possible to modify those objective conditions of existence. We can make a similar observation with respect to problems defined in the general space, where the explanatory and transforming powers are broadened. Often a problem defined in the singular space ceases to be important when it is defined in the particular or general space. Let us take, for example, a specific actor for whom the access of the population to dietary supplements to alter the frequency of undernutrition constitutes a problem; if the actor can redefine the undernutrition problem in terms of improving the objective conditions of existence and the quality of life of the population groups for whom undernutrition is a problem, access to supplementary feeding will cease to be important or it will take on the transitory character, like an emergency. However, it is important to point out that the broader the space for defining and explaining the problems is, the greater the need for resources of power (technical, administrative and political) to act.

On the other hand, it is important to point out that the spaces indicated are not exclusive; on the contrary, we should assume them to be inclusive or recursive. The general space includes that of the particular and the particular that of the singular. Hence all actors in health are called by the facts to respond in the singular although they have the capacity to identify and explain problems at the general level.

The processes corresponding to higher spaces have a determining relationship with the processes that correspond to spaces lower in the hierarchy. This relationship should not be assumed to be causal, but as the capacity to delimit the "space of possible diversity" of the processes and phenomena (see diagram 2). Situation "A" delimits the possible diversity of "B" and excludes the possibility of "C." The processes of determination corresponding at the level "B" and the laws of chance operate within that space of possible diversity.

However, the way that the facts are developed at a specific level is translated into organization, biological and social accumulations, affecting the higher levels of determination. Thus, for example, the health and disease profiles of a specific population group are determined by the processes of social reproduction of its objective conditions of existence (particular level), which are determined by the processes that govern the general reproduction of that society and that establish the particular form of insertion of that group in such general processes. However, and precisely because the reproduction of the general relationships of society supposes the reproduction of the different groups that compose it, any modification at the level of the objective conditions of existence of a group will be expressed in one way or another in the general processes of reproduction (2). Thus among the processes of the upper and lower levels there is a relationship of "determination," and in the opposite direction there is a "conditioning" relationship (see diagram 1.)

In the interior of each space or level there exists also a dynamic of determination and of conditioning. That is to say, a relationship of determination of the laws and principles about accumulations (organizational forms) and of these to the flows of events (phenomena) that they generate and, at the same time, a conditioning relationship among the flows of events, which produce biological and social accumulations and can force the "rules of the system" (3).

In light of this complex process of determination very often unilateral positions are assumed that emphasize some of their levels and components, exhibiting the vices of reductionism when problems corresponding to superior spaces are defined or explained in lower spaces, or resorting to mechanistic solutions when easily definable, explicable, and modifiable problems in lower spaces are dealt with only at the higher levels. It is obvious that this is related not solely or not so much to limitations of
knowledge as to the point of view and interests of the actor.

**Description, Explanation, and Transforming Action in the Singular Space**

This is the space of what we could call "epidemiology of what." The "problems" of health and disease in this space appear as variations among individuals or individual attributes; the usual way to define them is by the frequency and severity of one particular pathology or accident among persons with specific attributes of time and space or individual biological or social character. The forms of organization—the accumulations that these facts produce—tend to be individual forms of life and behavior which have recently been called "lifestyles" (14) or the individual exposure to risk factors or processes that in their expression constitute what are termed "groups at risk" (15). The most generic laws and principles defined by epidemiology at this level are the laws of variation of the agents, of the host, and of the risks, although, in addition, a set of other laws and principles more specific for each type of pathology or problem has been defined (16). From our point of view, this is the space that contains most of the theoretical, methodological, and technical developments of epidemiology for the study of epidemics to evaluate risk factors, for epidemiological surveillance of specific problems, and more recently for the evaluation of technologies.

To assume the problems at this level is in short to grasp the way the social and biological processes of determination and effect are articulated to produce the singular manifestations of the health and disease phenomena, and not just to assume the individual biological expression of the social processes. These singular expressions are not only biological expressions; they are singular expressions of biological and social processes. The actions that are thus derived from the definition and explanation of the health and disease problems tend toward control of the injuries and specific risks of a problem or group of problems; therefore the organization of the health care model from which they are derived tends to be that of programs or services directed toward specific pathologies, often vertical and centralizing in nature.

The extensive methodological and technical arsenal available for the approach at this level must be dominated by those who desire to respond to the health problems from the health services or under conditions of limited resources of power. Management at this level is basic not only to gain legitimacy, but also to show its limitations and the need for redefining the problems in higher spaces and accumulating power in order to act on them.

**Definition, Explanation, and Transforming Action in the Space of the Particular**

This is the space that we could call "epidemiology of who." The "problems" appear defined as variations of the health and disease profile at the level of population groups (17,18). The explanation emphasizes the processes of social reproduction of the objective conditions of existence (quality of life) of each group and the laws and principles that govern the accumulations—the ways in which the different "moments" of that process are organized.

The existence and reproduction of men and their objective conditions of existence include as a first indispensable condition existence as a species—the replication and reproduction of the morphological and functional characteristics of the human species. For purposes of health and disease we should point out the processes of gestation, growth, and development, and their expression in the genetic capacities and patterns of immunological response. Hence, biological reproduction is one of the principal "moments" in the process of social reproduction of the objective conditions of existence of individuals and groups.

The existence of men and social groups, as with other forms of life, occurs immersed in multiple ecological systems in which they interact with many other human groups and other species under specific natural conditions. Another principal "moment" of social reproduction of these conditions of existence is therefore the moment of reproduction of the ecological relationships.

The relationships among men and between them and nature are mediated by the conscience and the forms of behavior from which they are derived. To reproduce a human group implies the reproduction of its forms of perceiving itself and the rest of the population groups and perceiving the social and natural world in light of which its behavior is defined (the conscience of the individual, the group, the nation, and the class; the level and forms of knowledge of the natural and social processes; etc.). The third principal "moment" to distinguish is the moment of reproduction of the forms of conscience and behavior.

The relationships among men and between them and nature are basically mediated by the capacity to work, to produce, and to distribute goods and services in order to fulfill needs. To reproduce the existence of a population group requires reproducing its economic relationships—its forms of insertion into
the productive process and the distribution and consumption of goods and services. The fourth principal "moment" to identify is thus the moment of reproduction of the economic relationships.

The process of social reproduction therefore includes at least four principal "moments": of reproduction of the biological processes, that of ecological relationships and processes, that of the forms of conscience and behavior, and that of economic relationships. Each of these processes is governed by principles and laws that the specific scientific disciplines have been charged with revealing. The different disciplines of biology, ecology, the sciences of the conscience and behavior (psychology, anthropology, education, etc.), and the different economic disciplines provide us each day with conceptual, methodological, and technical elements to understand the flows of events and the forms of organization (accumulation) corresponding to each moment. However, it should be noted that the objective conditions of existence of a social group and hence their health and disease profile are not the more or less random summation of the facts and accumulations in each reproductive moment, as independent processes. The notion of "moment" attempts specifically to overcome the concept of stage and the vision of "structures" or independent processes. Each moment involves all the other moments in its process and is at the same time affected by them. Entering by one moment we find ourselves with all the moments.

The laws and principles that govern in each particular reproductive moment are specific. Yet they are articulated—in the complex biological and social process of reproduction of the objective conditions of existence of each social group—in a different way. This way of articulation is an expression of the general process of reproduction of the society and of the form of insertion of that social group.

Dealing with the health problems at this level makes it possible to identify the accumulations that produce the health and disease profile of each group and to identify the technically feasible actions that at the level of biological reproduction (gestation, growth, development, genetics, immunology, etc.) could modify them. It also makes it possible to identify the accumulations at the ecological level (natural conditions, exposure to epidemiological cycles of diseases, environmental sanitation, environmental working conditions, etc.) and at the level of the forms of conscience and behavior (organization, participation, education, mobilization, etc.). At the level of economic relationships (working process, participation in distribution and consumption, access to assistance, etc.) that we can modify, it becomes possible to identify the type of actions that must be produced in order to accumulate possibilities of transforming them. Or it allows identification of the type of actions that we should produce so that the economic, political, and cultural organization (the form of insertion of the social group in question) and the actions that they produce, impact on the general. Or the need for changing the general rules of the system.

The health actions that are derived from this particular approach tend to be organized in health plans and programs for population groups, opening up greater possibilities for decentralization and the participation of community organizations. This approach makes it possible to redefine many of the actions that could be defined in a singular approach or to strengthen them as part of an effort to modify the conditions of existence of a group. In like manner it allows the possibility of defining a set of indicators for periods prior to the process of determination, and also redefining the thinking on prevention and health promotion, thus agreeing with the most advanced conceptualizations of the "strategy of primary care," to be understood not as "a marginal program for marginalized populations" but as the set of social actions directed toward promoting the transformation of the quality of life of all the sectors of the population.

We have wanted to insist on this space of the particular inasmuch as, in our opinion, many of the theoretical and methodological limitations and difficulties of those who work in the health services reside in the limitations on defining the problems and evaluating their actions in this realm. In addition, we think that many of the difficulties in the incorporation of the most advanced social thought in the technical spaces of health occur because of the limited emphasis on these processes of mediation and the limitation, often, on the approach in the general space. To grasp the space of the particular is to grasp the processes that mediate among the most general processes and their manifestations at the singular level. It is to assume the entire explanatory potential of the biological and social sciences, but based on the definition of health and disease "problems" and on the search for actions that strengthen our efficiency and effectiveness.

Definition, Explanation, and Transforming Action in the Space of the General

This is the area of health policies and plans. The problems appear basically as the need to decide among priorities, among them the health plans; as the need for prioritizing among different population
groups; and as the form of insertion of the health profiles of the population and of the health care model into the economic, political, and demographic processes and the natural conditions of the site where they take place. This is the area where the basic characteristics of the health care model tend to be defined.

Approaching the problems of health and disease at this level makes it possible to identify the relationships between them and the economic models, the historical changes in the political processes, and the impact of large warlike or natural catastrophes.

We will not expand our considerations of this space, because of our own limitations, the limitations of space, and the fact that the area belongs more to those doing social research in health. However, we want to point out the need for intensifying the development of conceptual, methodological, and technical tools for the prospective assessment of the health and disease problems. Under conditions such as those that currently exist in Latin America, the need has increased for instruments to evaluate the medium-term impact of the decisions of today in order to provide them with a more solid base. There has been considerable development of evaluation in other fields which contrasts with the still primitive state of its utilization in health. It is also indispensable because many decisions have an impact many years later and are mediated by the impact of many other processes.

References

29 The notion of processes of determination linked to explanatory thinking should not be restricted to positivist “causal thinking” in the sense of Hume or Stuart Mills. Neither should it be confused with merely probabilistic notions such as those of Suppes or pragmatic, structuralist, neopositivist ideas like those of Collingwood. Although there is no corresponding systematic discussion of causal thinking in epidemiology, it is indeed desirable to point out the relevance, in the practical process of knowledge, of the theories that the actor in the field of knowledge has concerning the object, such as has been recovered and emphasized in the thinking of Popper, and to point out, in addition, in contrast to this last author, the ranked dynamic complexity of the processes of determination, the relevance that the way the different social actors perceive the objects of knowledge and transformation has for the praxis of those social actors, and the socially specific character of these forms of perception.

For further discussion of the processes of determination in health we suggest:


a) Mac Mahon, B., and Pugh. Principios y métodos de la epidemiología (2nd ed) México, D.F.: La
Plague in the Americas, 1985—1988

During the last quadrennium, the human plague situation in the Americas was consistent with the endemicity of wild rodent plague in its natural foci. PAHO has received reports of 438 cases of plague with 42 fatalities (50% of the number of cases reported during the previous four years, 1981-1984). This reveals an overall case fatality rate of about 9.6%. It is interesting to note that there is no evidence that the pneumonic form of the disease is occurring in the Region. Bubonic cases of plague were reported from the five countries of the Americas where endemic foci of plague have been active for the last several years. During this period of time the geographic extension of the infected area of Peru has contracted significantly. This was probably due to the regression of plague following the rather severe outbreak reported in 1984 which expanded to three of the northern departments of the country. The cessation of this outbreak in Peru contributed significantly to the decrease in reported cases during this quadrennium.

On a global basis, during the last four years, the Region of the Americas geographically comprised 5 of the 12 countries (42%) reporting plague to the World Health Organization (WHO). These five countries (see Table 1) were responsible for about 12.5% of the total number of global plague cases recorded by WHO.

Table 1. Plague cases and deaths in the Americas 1985-1988.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of cases reported (deaths)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1985</td>
</tr>
<tr>
<td>Bolivia</td>
<td>—</td>
</tr>
<tr>
<td>Brazil</td>
<td>7(2)</td>
</tr>
<tr>
<td>Ecuador</td>
<td>3(2)</td>
</tr>
<tr>
<td>Peru</td>
<td>44(3)</td>
</tr>
<tr>
<td>United States</td>
<td>17(2)</td>
</tr>
<tr>
<td>Total</td>
<td>135(9)</td>
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