THE ROLE OF SOCIAL SCIENCE RESEARCH IN RECENT HEALTH PROGRAMS IN LATIN AMERICA*

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CLEARLY THE WINDS OF CHANGE SWEEP OVER LATIN AMERICA TODAY. EVERYthing one observes, reads, and hears about this vast culture area points to vital (often radical) social, cultural, and economic transformations which are resulting in new ways of life for these millions of Americans whose ways of life derive from Spanish, Portuguese, American Indian, and African sources. Changes in customary patterns of thought and behavior are taking place more slowly in some countries than others, and even within a nation some areas respond much more quickly to innovative efforts than do others.

Unlike such subjects as agrarian reform or industralization around which there is waged bitter controversy as to the need as well as the most appropriate method, very little dispute is associated with proposals to introduce new, better, and more plentiful health services to the people of Latin America, especially those who live in less accessible rural areas.

In this article, I address myself to the task of reviewing significant efforts to make available and more effective new or improved preventive health and medical care services to the peoples of Latin America.

This review summarizes recent trends and changes in organized health services including innovations in the preparation of all classes of health workers, ranging from physicians to rural health auxiliaries. Throughout, every effort has been made to note the increasing influence of the social sciences (in particular, the behavioral sciences) on the health professions in Latin America. Fortunately, several excellent reviews have recently been published with a strong orientation to the increasingly close relationship which obtains between the social sciences and the health disciplines, particularly in South America. (Badgley and Schulte, 1966; Sepulveda, 1966). In addition, good discussions and bibliographic references to the more general literature with special relevance to interests common to social and medical sciences have recently been published (Driver, 1965; Paul, 1955; Pearsall, 1963; Polgar, 1962; Scotch, 1963). Rather than duplicate efforts, the present review pays special attention to programs and projects in Middle America and among the Spanish-speaking people of the United States' Southwest.

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No attempt has been made here to survey the vast literature on health concepts held by primitive or peasant segments of Latin America; for those whose interests lie in the direction of this important field of research, an extensive summary of the literature on Middle America is contained in a forthcoming article by Adams and Rubel. Material on indigenous health beliefs and behavior among primitive and peasant groups of the Southern continent may be found sporadically in various articles in the first four volumes of the Handbook of South American Indians (Steward: 1946–1948) as well as a summary by Ackerknecht, although there has been some very good work done in this area since the Handbook was published (e.g., Tschopik and Sal y Rosas).

Surely, one of the most interesting treatments of health problems in their total ecological context is the two volume work, *Una Política Sanitaria* by Gabaldón (1965). This two volume work represents a collection of articles and speeches by Gabaldón, who, for more than 25 years, has directed attention to the problems of health not only in his homeland of Venezuela, but to the real and philosophical problems of health-oriented research and development in developing nations.

It is difficult to conceive of a better documentation of the close relationship which obtains between a state of health and the socio-economic conditions of a region than Gabaldón's discussion of the malaria eradication programs in Venezuela. To this point he writes:

> The extension of a nation's territory is important because from such new lands crops may be raised which contribute to the national well-being. Two-thirds of our territory was found to be in greater or lesser extent under the yoke of malaria. This means that Venezuelans were restricted to only one-third of their nation's lands.
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> The disappearance of malaria from Venezuelan soil has signified an expansion of national territory, one equivalent in size to almost twice the area which was previously habitable. Many times adjoining nations go to war with one another to acquire land that often does not amount to more than ten percent of the national territory. As a consequence of the almost total eradication of malaria from its soil, Venezuela has gained more than one hundred percent over its previously habitable area. (1:325–6.)

There is a considerable literature which is devoted to discussion of programs by means of which the incidence of malaria has been substantially reduced in Venezuela and other Latin American countries. These efforts have required experimentation under differing climatic, social, and cultural conditions. Although there exists some information on the procedures by means of which the most appropriate insecticides were selected, there is no information as to the responses by the population to the eradication program in different kinds of settlements. Nor is there reference to the social structure, cultural values, and relationships which exist between the population groups affected and the natural resources from which they derive their income. (See Braña Blanco: 28). The importance of these factors in the outcome of a large-scale

malaria control program is clearly attested to by Gabaldón in later comments in which he indicates that the migration of rural populations from infected to non-infected areas, and from the Interior to major cities represents serious problems which require a considerable amount of investigation. (2: 430–32). It is worthy of comment that socio-cultural attitudes and behavior contribute in fundamental fashion to the success or failure of a large-scale program of malaria eradication. Even more significant is the effect which endemic or epidemic malaria has upon the world view of the affected population (1: 331, 335). Studies by social scientists of the adaptation of man to his environment in areas afflicted by diseases such as malaria prove to be highly rewarding to planners of preventive health and medical care programs. Investigations which reveal the effect which such programs have on traditional coping techniques, in turn, prove rewarding to programmers as well as to theory-oriented social scientists.

Another aspect of such large-scale disease control programs as has been described by Gabaldón, is the need to secure adequate personnel. Additional staff is needed to carry out eradicative measures and to organize health education programs to prepare the populace for such projects, and to conduct follow-up evaluations of the effectiveness of the control measures. It has most often proved to be the case that when such a large-scale disease control program is planned, there are simply not enough professional personnel available. (Roemer: 300). Indeed, a shortage of professional health personnel is a problem that affects all of the Latin American nations whether or not they embark upon a large-scale project such as malaria control. Statistics on the percentage of physicians and other health professionals in a country are misleading unless account is also taken of their distribution in the countryside. The sparse distribution of health personnel in rural areas is common throughout Latin America. The case of Venezuela is typical; forty-eight per cent of the physicians are in the Federal District where the ratio is 19.7 doctors to 10,000 persons, whereas it is 4.9 per 10,000 for the remainder of the nation. In El Salvador 61% of all physicians practice in the capital with a ratio of 12.5 per 10,000, whereas the ratio declines to 0.9 per 10,000 for the remainder of the country. In 1963, a total of five Latin American countries had a ratio of less than 3 physicians per 10,000 persons (Pan American Health Organization: 1966: 281).

There have been some significant efforts to increase the number of practicing physicians in these countries (PAHO: 1966: 26). In Chile, aspects of such developments have recently been described (Berdichewsky: 1966: 183; Facultad de Ciencias Económicas: 45–74).

It is quite clear, however, that an increase in the number of practicing physicians will not necessarily modify the tendency for these professionals to congregate in the larger and more cosmopolitan cities, nor prevent the hinterlands from being deprived of professional care.

One of the first attempts to cope with the problem of maldistribution of

physicians was undertaken by Mexico many years ago. In 1936, the School of Medicine of the National University launched a program requiring prospective young physicians to devote a six month period of service in small rural towns which would not otherwise have available the services of a doctor. Aside from medical care and preventive health duties assigned the young practitioner, he was expected to engage in health education and to prepare a report on demographic, environmental, and social organizational characteristics of the settlement in which he practiced. (Whetten: 1948: 346–8; Roemer: 166–7). Besides representing an effort to introduce modern medicine into small rural towns for short periods of time, the goal was to introduce young practitioners to rural settlements with the hope that they would be inclined to remain there after their period of obligatory service ended. However, Roemer cites figures from a 1960 study which indicate that in 1960 only 5.8% expressed an intention to remain in the rural settlement after having completed their obligatory service (Roemer: 168). The increasing number of physicians graduating from schools of medicine since 1936 has greatly improved the ratio of physicians to patients in Mexico as a whole, but it has only slightly improved the ratio of doctors to the total population in the rural areas. Thus, although the latest statistics indicate that Mexico's ratio is among the most favorable in Latin America, it is still far short of satisfying the need (PAHO: 1964: Table 53).

More detailed discussions of the historical background and present status of efforts to introduce professional practitioners to the Mexican countryside by means of the *pasante* program are to be found in the works by Othon de Mendizabal (6: 525–51) and Alvarez.

In addition to the pasante program, which began in the National University and since has spread to most of the other schools of medicine, there is a similar effort in the School of Rural Medicine which turns out a relatively small number of students who intend to practice medicine in rural areas (Roemer: 167; Whetten: 348–9).

Participants in the pasante rural internship program and those other physicians who are graduates of the School of Rural Medicine are expected to, and some actually do, engage in studies of the social and cultural behavior of the rural villagers. The former even write theses on the health and social problems of the small towns and rural regions in which they practice, although these studies tend to be quite superficial and serve as little more than introductions to the way in which a physician perceives the locale in which he practices and its social and medical problems.

There have been other efforts by the Mexican government to introduce innovations in customary health-relevant attitudes and behavior among rural populations. As its name suggests, the National Indian Institute devotes itself solely to the problems of indigenous communities with attention to studies of

indigenous health systems and plans by which they might be effectively changed. The interest of the Institute in effectively changing traditional Indian life without causing traumatic dislocations has proved a boon to the social scientist. Aside from such excellent studies as *Medicina y Magia* by Aguirre Beltrán and *Medicina Maya de los Altos de Chiapas* by Holland, there are two regular series of publications of equal interest to health programmers and social scientists. These are: *Acción Indigenista* and *Memorias del Instituto Nacional Indigenista.*

Aguirre's extensive study of the processes by which culture traits from indigenous American systems, African health systems, and traits representative of the 16th and 17th century Spain merged to form the currently prevailing logic governing the health behavior of Indian groups in Mexico, represents the fruit of many years of anthropological field and library research. During this period of research he was employed in the preparation of student physicians as a member of the faculty of the School of Rural Medicine and also as a staff member of the School of Public Health. *Medicina y Magia* clearly demonstrates how very advantageous it is to carry out research using the techniques of anthropology while at the same time actively participating in a medical environment. The combination of both activities contributes to a better understanding of non-western systems of healing.

Whereas Aguirre's *Medicina y Magia* is a remarkably good effort to explain the historical process which gave rise to present-day indigenous health systems of Mexico, the study by Holland (1963a) represents a careful attempt to describe the indigenous health system of the Tzotzil-speaking people who inhabit one municipio of the Southeastern highlands of Mexico. Justifiably criticized because the author "generalized beyond his data" to Tzotzil-speakers of other municipios, Holland's work is still one of the richest sources of ethnographic material now available to us on the health system of an indigenous group (see the review of Holland's volume by Vogt). Another valuable contribution made by Holland is his description of efforts by the National Indian Institute to introduce modern medical and preventive health programs into the Indian communities of the highland area under the leadership of the director of the Institute's new Tzeltal-Tzotzil Regional Coordination Center, Aguirre Beltrán. Holland's description of the problems which beset the efforts by the Coordination Center to establish a permanent clinic in the Tzotzil-speaking municipio of Chamula and to carry on a large-scale smallpox vaccination program and a typhus-control campaign are most interesting and instructive reading for anyone engaged in or planning the introduction of new health measures to indigenous groups (Holland: 1963a: 211–33).

As Holland describes the relative success or failure of the several programs initiated by the Institute in the highland region, it becomes quite ap-

parent that the staff was very much aware of the fact that the greater their understanding of the culture and social organization of the groups whose ways of life they sought to change, the more probable the successful outcome of their program.

The importance attributed by the Center's staff to an understanding of the way of life of the groups with whom they were working was previously indicated by Aguirre in his *Programas de Salud en la Situación Intercultural.* Aguirre stressed that any attempt to outline the problems of carrying out health programs in situations in which the agency personnel are from a different background than the people for whom the program is being developed must take into consideration the differences between agents of change and those for whom innovative practices are designed. A program which is designed in an inflexible manner, working on the assumption that planners and recipients share the same cognitive world, may be satisfactory for a situation in which staff and potential patients are of the same educational background and share social-economic status; but, he concluded, such a program is doomed to failure when it is attempted in the indigenous zones of the country (Aguirre: 1955: 12). Aguirre's volume provides an excellent example of a well-reasoned philosophy of deliberate innovation and, at the same time, a practical guide for staff. He wrote:

> Only a knowledge and understanding of the way in which a group organizes its activities, and the ways in which social control is exercised by the group that it may better maintain its cohesion and esprit de corps, will enable the staff of a health agency to directly approach leaders or authorities of the community who have so much influence on the final decisions which their group makes. Programmers must first seek the acquiescence of those who, in the final analysis, represent the difference between whether the group will accept or reject the innovations proposed by the health agency. (Aguirre: 1955:15–16).

Compare that guide-line for action with the observations Holland reports of several programs in which staff of the Center went to great length to explain their proposals to the leaders of the Indian communities in which they were attempting to introduce changes in health-relevant attitudes and behavior (Holland: 1963a: 211–13).

In a separate study Miller applied anthropological techniques to the problem of how an Indian village, Yalcuc, in the highlands of Chiapas, decided to initiate a plan to build a medical clinic, staffed by a sub-professional representative of the National Indian Institute (Miller: 53–65). He pointed to the fact that the single most influential man in Yalcuc had been oriented to modern medicine for many years, but that few others had followed his example. Nevertheless, it became clear that when the Center established a clinic eight

miles away in another village, some of Yalcuc's residents were predisposed to utilize its services. Five years later the influential alluded to above and a few others proposed that Yalcuc build a clinic of its own to be serviced by personnel from the Center. The decision in favor of the clinic was unanimous and almost everyone later contributed to its construction. "The post was completed in the summer of 1957 and staffed by a bright and industrious fifteen-year-old boy who had trained for three months at the nearby clinic. His task was to dispense drugs and administer injections in cases of influenza and other simple ailments, to refer more difficult cases to the clinic, and in general to promote the use of modern medicine." (Miller: 62–63).

Miller then focused on the actual utilization of two innovations introduced by the Regional Coordination Center. Although the proposal to build a clinic in the village was approved unanimously, one category of resident utilized clinic services twelve times more than another. These differences could not be explained by educational, economic, or acculturation variables. Secondly, the Coordination Center proposed building sanitary latrines, a suggestion which was again brought to the highly influential leader who has been referred to above. The leader presented the suggestion to the assemblage of male villagers, indicating at the same time that he thought it a good idea. Eighty-eight per cent of the men approved of the suggestion and proceeded to build sanitary latrines. However, as in the previous case, there proved to be a very significant disconformity between a public decision to install new services, and the extent to which those services were used. Miller concluded that:

> In the Tzotzil village of Yalcuc the leaders are oriented to change and are most effective in obtaining a consensus when the issue involves a non-recurring decision by the community. On the other hand, the diversity within the community is most likely to express itself when recurring decisions by individuals are required. (Miller: 65.)

Another instance in which an anthropologist focused on the reasons why a small community decides to accept or to reject health innovations is provided by Wellin (1955). Wellin discovered that in even so simple an innovation as instructing housewives to boil water in the Ica valley of Peru, the local system of status and the role of influentials must be taken into account by those proposing the innovative behavior.

Strangely enough, despite the obvious advantages which accrue to health programmers and practitioners from a knowledge of what happens and why, as communities make decisions as to whether or not to accept innovative techniques or services, the relevant literature is notably lacking in data which describe the decision-making process in microcosmic settings. Macrocosmic analyses, however, of the importance of the decision-making mechanism vis-a-vis health programs are available. Indeed, some important contributions to the

general theory of social and cultural change have evolved from this area of interest (Erasmus: 1961; Foster: 1962).

Although few analyses are available of the decisions by which innovations in traditional health attitudes and behavior are accepted or rejected in small Latin American rural communities or poor urban neighborhoods, there is an impressive literature on the *agents* of change. Some of those reports have already been mentioned (Holland: 1963a; Aguirre Beltrán: 1955; Miller).

Whether they work in indigenous communities, in rural villages and hamlets occupied by poorly educated peasantry, or among the lower- and working-classes of the cities, those who practice and encourage the use of modern medicine are agents of significant socio-cultural change. A discussion of the agents of change must, however, be viewed within a framework of one of the most vexing problems which confronts Latin America today: a shortage of professional health personnel (Round Table Conference: 31–63; Badgley and Schulte: 1966b: 189; Gomez: 2; Roemer, PAHO: 1966: 26–33; Albo and Lagrande: 141; Ferebee; Vocational Rehabilitation Administration).

Efforts to cope with this many-faceted problem may be divided into two categories. The first of these represents a large-scale effort by many organizations, some of which are national in scope, others international, to increase the numbers of individuals who are enrolled in professional training programs. The second represents an attempt to increasingly delegate public health and medical care responsibilities to sub-professional aides. These categories will be discussed in turn.

Training programs for professional health workers have been characterized in the last few years by intensive efforts to expand teaching and laboratory facilities in medical colleges and schools of public health. Furthermore, observers have noted a shift in emphasis away from classic narrow concerns with the human body and its health problems to an understanding of the human being in his total socio-cultural setting. This trend has been most clearly demonstrated in the programs of the School of Rural Medicine and the Medical Faculty of the National University of Mexico (Mendizabal; Alvarez; Aguirre Beltrán: 1955, 1963: 12–14; Martinez). This trend has been subjected to an insightful and provocative commentary by the Director-General of Public Health Education in Mexico, Pedro Daniel Martinez, who writes:

> It is well known that over the past two decades an increasing amount of attention and time has been devoted to the social science curricula in the majority of schools of public health. At the same time, the attention devoted to such other disciplines as statistics, microbiology, and parasitology has been reduced. At least in part, these trends in our own schools of public health reflect the ever diminishing relative importance of the infectious diseases in the United States and the increase in relative importance of the chronic diseases; effective control of the latter far more than in the

case of the former, requires an understanding of human attitudes and behavior. Also contributing to the new trends which emphasize the teaching of social sciences in public health schools is a growing awareness in the developing nations that the improvement of health levels requires concomitant changes in other areas of the way of life of their peoples. Thus, despite the fact that infectious disease in both developing and static, underdeveloped nations represents a problem of greater magnitude than that of chronic disease, it is clear that in the developing nations integrated preventive health projects call for more extensive and more profound exposure of professionals to the sciences of man and his society. (Martinez: 1963:31.)

Badgley and Schulte also have commented on a notably growing tendency for schools of public health and medicine in Latin America to utilize their North American counterparts, instead of European universities, as models (1966b: 190). Information on these changes, as noted in the University of Chile Medical School and in the School of Public Health of the Central University in Venezuela, respectively, is presented in three interesting papers delivered at the proceedings of the Sixtieth Anniversary Conference of the Milbank Memorial Fund in New York City (Molina and Jimeno; Vallejo and García; Jiliberto de Guevara and Munizaga A.).

The second category of efforts to cope with the problem of too few health professionals is represented by extensive efforts to recruit, train, and distribute in as efficient a manner as possible a large number of sub-professionals ranging in skills and backgrounds from skilled orthotists to unskilled, relatively uneducated, medical aides. No matter what the skills of these sub-professionals, there is no question that they and their activities and attitudes represent a resource (real and potential) of extraordinary importance to health agencies in Latin America and to students of social and cultural change as well.

One of the least heralded areas in which national and international organizations are expending considerable efforts to improve the number and quality of sub-professionals is in the field of physical medicine and rehabilitation. In 1960, the Office of Vocational Rehabilitation of the U.S. Department of Health, Education and Welfare extended its research and development interests to countries of Latin America. This international program takes advantage of counterpart funds (foreign currencies accumulated abroad from the sale in those nations of United States agricultural commodities).

In response to a recent great increase in demands by Brazilians for rehabilitation, inclusive of orthotic and prosthetic services, the U.S. Office of Vocational Rehabilitation, the Associção de Assistencia a Criança Defeituosa of São Paulo, and the United Nations, began a program to train technicians in orthesis in a much shorter period of time than had previously been thought possible. Another facet of this program was to stimulate the interest of private industry in the commercial possibilities of manufacturing components for

prosthetic devices. Both targets of this program have been met (Vocational Rehabilitation Administration: 24). Similar training programs have taken place in Haiti and Peru. Finally, the Instituto de Rehabilitação of São Paulo has embarked on research to discover the best methods by which to evaluate the ability of patients to return to their home communities.

Although rehabilitation programs obviously would benefit from the collaboration of social scientists, in those just described there were no provisions for them. The increased production of components of prosthetic devices, which can now be sold at prices far below what have heretofore been possible, means that ever greater numbers of the physically disabled will be adapting themselves in new ways to their home communities. The opportunities for studies of the ways in which disabled persons adapt to and are accepted by their communities are many. So far, there has been no research, neither basic nor of an evaluative nature, on the social adaptation of the disabled to his home community by social scientists. It is worthy of note that the Office of Vocational Rehabilitation is actively encouraging social scientists to engage in research on this problem in Latin America.

Although the training of skilled technicians is a significant aspect of the changing scene in Latin America, it is not comparable in importance to the extensive efforts being exerted in a number of nations to recruit and train relatively unskilled auxiliary health personnel. While there is a rather extensive literature which describes the need to recruit auxiliary personnel and the kinds of tasks for which they are recruited, there is a striking absence of any social science efforts to evaluate the reasons why some individuals are selected by health agencies, whereas other are not, in those nations in which such recruiting programs are taking place. Even more noteworthy is the near absence of investigations of the social and economic characteristics which identify those who successfully carry out such responsibilities or who sustain active interests in auxiliary health duties. One exception to this is Wellin's discussion of how the Sanitary Service of the Department of Ica (Peru) developed a project intended to ". . . augment the seven existing municipal [birth] registries with a network of 17 additional registry posts, each in a strategically located village; select, train, and supervise qualified villagers to man the posts; develop suitable registration forms . . ." (Wellin: 1966: 113). In this study Wellin compared two men, each of whom had been selected for the post of registrar of births. One succeeded in his role; the other did not. The author concluded that, whereas the less successful registrar had had few ties with his community or little interest in community affairs before assuming responsibilities for the registry post, the more successful registrar was characterized as follows:

> The curious fact emerges that the person with less education, less technical proficiency, and less understanding of the nature and objectives of the program is the more

successful registrar. Luis' credentials are poorer, but his stake in occupying the position is greater. He is motivated to perform well as registrar not simply beause good performance brings health department approval—although this is crucial to continued occupancy—but more importantly because thereby he gains within-community goals. (Wellin: 1966:113.)

Moreover, Wellin found that those others who also succeeded in the status of registrar were similarly characterized (See Gabaldón: 2: 50).

One of the earliest articles written about efforts to train sub-professionals as medical auxiliaries was prepared by Isabel Kelly (1955; see also Wellin, 1955: 98). Kelly urged health educators, embarking on programs for training midwives, to avoid causing unnecessary friction between the practicing midwives and the hospital to which health professionals refer their patients. In harmony with the last notation, Kelly stressed the need to understand the local culture in which the midwives practice before beginning the training program. In this way health educators will find themselves better able to present their innovative ideas with less likelihood of causing conflict between their own concepts and behavior and those of their pupils (see Cuello et al.: 324).

One of the oldest and most intensive efforts to change and to train members of a community so that they might act as bridges between their community and health agencies, is represented by the indigenous *promotores culturales* of Mexico (de la Fuente: 1959; Aguirre Beltrán and Pazos: 276; Miller: 63; Holland: 1963a: 212, 214, 219, 222, 223, 224, 227, 241, 242). A promoter is member of an Indian community who has shown some considerable motivation to become more closely identified with Mexican national culture than have most of his peers. Those who are selected for training as promoters have also shown themselves to be alert and able to learn new ideas and techniques in relatively rapid fashion. Each person selected for training is brought from his home community and entered in a boarding school in the Coordination Center which serves his people and his region. There the recruit is taught Spanish and basic techniques of first aid as well as some routine medical care techniques. He is also instructed in fundamental public health concepts of sanitary and environmental engineering adapted to the needs and the resources of his home village. Following a training period in the boarding school, he is sent back to his home community as an on-the-spot representative of the Coordination Center.

Although there is general consensus that the promoters make a genuine contribution to the improvement of health conditions in the communities in which they are located, there is little question that the very ambivalence of their social status creates substantial problems for themselves and for their fellow villagers. Some promoters are unable to resolve their identity problems in their home village or *paraje*. Others find rural life intolerable after having enjoyed the more intellectually stimulating life of the boarding school and the

glamour of the provincial center in which the school is located. Although it is clear that the experiences gained from the promoters program can be very helpful to similar projects in other nations (whether the problem is that of cultural differences or one which arises as a consequence of social class distinctions), an evaluation of the social and psychological problems associated with efforts by promoters to readapt to a rural indigenous settlement would allow the program to make an even greater contribution on an international scale than is presently the case (de la Fuente: 1953: 56).

Another elaborate program to introduce change into rural areas by the use of sub-professional health workers has been undertaken in Venezuela, where the program of preparing *visitadores rurales* has been referred to by the felicitous term of *medicina simplificada* (Gabaldón: 2: 46–51). In Venezuela, medicina simplificada refers to an effort to recruit and train laymen in order that they might extend the services provided by nurses and sanitarians from capitals of *municipios* to the more rural peripheries of those political units. Gabaldón discusses another type of contribution which might be made by a similarly trained, but voluntary group called "The Samaritans." He writes:

> Notwithstanding the simplicity of the training which we propose to offer a corps of rural health auxiliaries, we consider these aides to represent an efficient means to prevent various illnesses and to cure still others which at this time afflict a considerable segment of our population; a segment which is not subject to medical attention of a more classical type and, in many cases, does not receive any attention whatsoever because of occupying areas which are difficult to reach. (Gabaldón: 2:40æ46.)

The most important problem which faces the administrator of such a program, according to Gabaldón, is to adequately train his auxiliaries so that their contribution may be as profitable as possible. Training for their responsibilities can be divided into three areas: (1) supervision of midwives, (2) vaccinations, (3) the fight against helminths. So important did he consider inauguration of such an auxiliary service that he wrote that he thought this measure to be "in many cases possibly the only way which might be created to combat the high rate of mortality in rural areas" (Gabaldón 2: 49).

In conformity with the advanced thinking of Gabaldón and other prominent health planners, a way was found to expand health services in rural areas in Venezuela, Mexico, Argentina, and the Dominican Republic by the recruitment of medical aides. Their services have been found especially valuable in anti-tuberculosis campaigns, but in Venezuela they have been assigned duties of far wider scope (Baldó: 1965; Baldó et al.: 1965). The incorporation of the working concept of medicina simplificada in Venezuela was accomplished by the rearrangement of national health services into four networks, each of which in turn comprised less skilled personnel and reached into areas more remote

from the national capital and other major centers of the population. A medical outpost attached to the fourth network actually provides simplified medical care to the inhabitants of remote villages, but the auxiliaries stationed here are dependent upon more highly trained personnel who are located in a medical post in the nearest center of population. Members of the third network are in turn dependent for information and assistance on those of the second network, stationed in still more easily accessible and larger settlements, etc. In brief, the tasks of the auxiliaries of the fourth network include identification of suspected tuberculars, bringing them to sites in which they can be examined, and providing transportation when public carriers are not available. When a case is identified, these auxiliaries are to assure that the patient continues to follow the regimen prescribed, to provide vaccinations when these are required, and to engage in health education activities (Baldó et al.: 78).

On the basis of the anthropological data which derive from the Hidalgo County Project on Differential Culture Change and Mental Health, William Madsen has recommended that Mexican-American *curanderos* of South Texas be enlisted as auxiliary medical aides and

> be taught to work with physicians and to bring their patients to clinics and hospitals. Cooperation between physicians and curanderos could be particularly valuable in those cases of mental illness which would respond to treatment better in a home environment than in an institution. (Madsen: 1961:34–35.)

For careful descriptions of the healers who practice in the borderlands of Northeast Mexico and South Texas, see the recent publications by Romano (1965) and Rubel (1966).

Other efforts to recruit para-medical assistants and to help make up for the shortage of professional health workers range from the organization of Centros de Madres in Chile to the use of military personnel in Venezuela. Whatever the socio-cultural chaarcteristics of the auxiliary recruits, the goals always include the following: (1) to train auxiliary aides to perform medical care and preventive health functions that would otherwise have to be performed by a professional physician or nurse (in many cases the extreme shortage of the latter would mean that in the absence of auxiliaries, the tasks would simply not be accomplished); and (2) to utilize the auxiliaries as intermediaries and interpreters between the local community and agency personnel. In the case of a plural society such as Mexico or the United States, in which significant proportions of the population are of a different culture and use a different language than those which characterize agency personnel, the task is a particularly delicate and difficult one. On the other hand, the problem of communication between middle-class health workers and lower-class patients is only a little less delicate or difficult (Rogler and Hollingshead: 253–54;

Samora et al.). My own observations in a small Texas city along the border with Mexico: are pertinent to this problem:

> Physicians are members of a social stratum which overrides nationality and language; they share a professional culture. Furthermore, physicians are members of a social-class stratum which is characterized by high income gained in a prestigeful occupation, by a high level of educational achievement, and by an expensive residence with appropriate accoutrements. Moreover, physicians communicate by means of a professional vocabulary, one which the overwhelming majority of patients . . . do not share with them. The fact that only two physicians in this city are able to communicate with the *chicanos* [Mexican-Americans] or to elicit basic health-relevant information from them in the patient's primary language merely exacerbates an already grave problem. Phrased somewhat differently, a communication gap exists between all physicians in this area on the one hand and all patients on the other, but the problem is more pronounced between non-Spanish-speaking physicians and their Spanish-speaking patients. (Rubel: 1966:193.)

In other areas of the American Southwest, anthropologists and sociologists have sought to discover wherein lie problems of communications between United States citizens and alien residents of Mexican descent, on the one hand, and those whose mandate it is to provide them health services, on the other. Some of these basic researches have already been published (Saunders: 1954; Clark: 1959). From some of these studies there derive manuals to provide health workers with some of the basic health concepts held by their clientele, whereas other publications consist of basic glossaries in Spanish and English to enable English-speaking nurses to phrase their messages to Spanish-speaking patients in a colloquial language they prefer (Hanson and Saunders: 1964; Gerritsen: 1964). The fact that these manuals and glossaries were prepared for use in the United States makes them no less important as illustrations of the kind of close collaboration that needs to exist between the social sciences and medicine among peoples of Latin-American background.

As previously noted, several social scientists have recommended the recruitment of lay-healers to work as auxiliary staff in health agencies. Such proposals seem to rest on two logical arguments. One may well be labeled the "If you can't lick 'em, join 'em" argument; and the other is that, given the need to recruit sub-professionals, it would be advantageous to consider as potential staff those persons who already hold high repute among their neighbors.

The flourishing of lay-healing in areas where adequate modern medical facilities exist is a matter both of continuous concern to administrators of health programs and health practitioners, and also a phenomenon of considerable interest to the social scientist. I have commented on the fact that in 1958–59, midwives and curanderos continued to be heavily relied upon in an area in which modern health resources have been present for more than half a century

(Rubel: 1960; 1966: 155–200; see also, Martinez and Martin; Holland: 1963b; Saunders; Clark). Cuello and her associates state that in a suburb of Santiago, Chile:

It is worth noting the great number of practicing healers despite the generally held notion that this class of specialist is disappearing. To this point it is interesting to wonder whether the healers will end up by disappearing or whether they will remain viable, while only changing their ways of curing. (Cuello et al: 328.)

Moreover, the authors make quite clear that

although this study was carried out in a proletarian neighborhood in which poor living conditions reigned, we would not be able to state that this kind of attitude and activity is the exclusive property of this socio-economic segment of the population. (Cuello et al:328.)

In similar fashion, Rogler and Hollingshead comment on Puerto-Rican spiritualists:

The beliefs in and practices of spiritualism are distributed throughout the society with perhaps a relatively pronounced tendency toward concentration in the lower classes. In the higher classes, however, spiritualists and their followers are careful to distinguish the type of spiritualism they embrace from that of lower-class spiritualism. Higher-class spiritualists energetically assert the scientific and experimental character of their beliefs; they argue that lower-class spiritualism is irrational, superstitious, and not based on the philosophical doctrines of Allen Kardec, who is considered to be the foremost codifier of spiritualistic doctrines. (Rogler and Hollingshead: 245.)

In support of the conclusion that in Puerto Rico spiritualism is by no means confined to the lower classes, Bram's short outline history is of value.

In contrast with the situation in Puerto Rico, in the Northern Mexican city of Ciudad Juarez, Chihuahua, there is extensive dependence upon Kardec's works by spiritualists whose centers cater to the needs of the very poorest neighborhoods; and, also, in contrast to Puerto Rico, there is an extensive bureaucratized association of spiritualistic centers in Ciudad Juarez, linking centers in that city with the Asociación Chihuahuense and, in turn, with the Asociación Mexicana de Espirituistas. It is of interest to note that in North Mexico, *e.g.,* Ciudad Juarez, and in Texas, not all spiritualists are associated with formal associations. A short list of books by or about Kardec has been included in the bibliography in recognition of the important influence he has exerted on concepts and methods of healing among Latin-American laity (Kardec, n.d.; Kardec: 1951; Kardec and Delanne: 1954; Sausse; see Atchley: 165).

Although the anthropological literature contains generalized references

to lay healers in the Latin-American region, there have been few attempts to precisely delineate characteristics of such practitioners of the healing arts, and still less evident are attempts to separate out one class of specialist from another. The value of such an effort can be quickly surmised by a reading of those few materials which are available (Metzger and Williams: 1963; Romano; Rubel: 1966). As Kelly suggested some years ago, any effort to work with lay practitioners (at that time she made specific reference to midwives) requires an understanding of the place which they hold in the social organization of the society (Kelly: 1955).

It is true that continued competition between lay healers and professional health services represents a problem to planners engaged in providing more well-organized services to the peoples of Latin-America. Whether one elects a punitive course of action intended to stamp out lay-healing services or whether one takes an alternative, intended to enlist the assistance of these non-professionals in agency programs, and to learn why significantly large numbers of people continue to bring health problems to the lay-healers in spite of the availability of modern health facilities, considerably more research by social scientists in collaboration with their colleagues in public health and medicine is required.

From all of the information available, the role of social scientists in re-orienting Latin-American health affairs is markedly increasing in importance. More demands are being made than ever before on their judgment and research skills to aid in the process of educating health workers and changing the customary ways of life throughout Latin-America.

BIBLIOGRAPHY

ADAMS, RICHARD N. AND RUBEL, ARTHUR J.
Sickness and Social Relations. In: Handbook of Middle American Indians, in press.

ACKERKNECHT, ERWIN H.
1949 Medical Practices. In: Handbook of the South American Indians. Julian Steward, ed. Vol. 5: 621–644.

AGUIRRE BELTRAN, GONZALO
1952 Problemas de la Población Indígena de la Cuenca del Tepalcatepec. Memorias del Instituto Nacional Indigenista, Vol. 3, Mexico.
1955 Programas de Salud en la Situación Intercultural. Instituto Indigenista Interamericano, Mexico.
1963 Medicina y Magia. Instituto Nacional Indigenista, Mexico.

AGUIRRE BELTRAN, GONZALO AND POZAS A., RICARDO
1954 Indígenas en el México Actual. In: Memorias del Instituto Nacional Indigenista, Vol. 6, Mexico.

ALBO, SILVIA AND LAGRANDE DE GASPARINI, OLGA
1966 The Quality of Medicine in Venezuela: A Socio Psychological Study. The Milbank Memorial Fund Quarterly, 44, part 2: 141–162.

ALVAREZ, JOSE MANUEL
1962 Projecto de Programa Para el Servicio Social de los Pasantes de Medicina de la U.N.A.M. Facultad de Medicina, Universidad Nacional Autónoma, Mexico.

ATCHLEY, DANA W.
1965 El Médico Científico y el Curador. Boletín de la Oficina Sanitaria Panamericana, 59: 342–351.

BADGLEY, ROBIN F. ed.
1966 Behavioral Science and Medical Education in Latin America, Milbank Memorial Fund Quarterly, Vol. 44, part 2.

BADGLEY, ROBIN F. AND SCHULTE, MARJORIE
1966a Behavioral Science and Medicine in Latin America: A Selected Bibliography. Milbank Memorial Fund Quarterly, 44, part 2: 27–51.
1966b Social Science Teaching Programs in Latin American Medical Schools. The Milbank Memorial Fund Quarterly, 44, part 2: 187–197.

BALDO, JOSE IGNACIO
1965 El problema de la tuberculosis en las Américas. Boletín de la Oficina Sanitaria Panamericana, 58: 37–66.

BALDO, JOSE IGNACIO, et al.
1965 La tuberculosis rural en Venezuela. Boletín de la Oficina Sanitaria Panamericana, 58: 66–82.

BERDICHEWSKY, ADELA
1966 Medical Training and Professional Practice. The Milbank Memorial Fund Quarterly, Vol. 44, part 2: 163–183.

BRAM, JOSEPH
1958 Spirits, Mediums and Believers in Contemporary Puerto Rico. Transactions of the New York Academy of Sciences, 20: 340–347.

BRAÑA BLANCO, SEGUNDO
1960 El Programa de Educación Higiénica en la Comisión Nacional Para la Eradicación del Paludismo. Salud Pública de México, Época 5, Vol. 2.

CLARK, MARGARET
1959 Health in the Mexican American Culture. Berkeley and Los Angeles.

CUELLO, ELIANA P., et al.
1959 Estudio antropológico de las diarreas infantiles en la comuna de Renca, Santiago, Chile. Boletín de la Oficina Sanitaria Panamericana, 47: 323–329.

DE LA FUENTE, JULIO
1953 El Centro Coordinador Tzeltal-Tzotzil. América Indígena, 13: 55–64.
1959 Un Programa de Preparación de Promotores en México. International Review of Community Development, 3: 39–47.

DRIVER, EDWIN D.
1965 The Sociology and Anthropology of Mental Illness: A Reference Guide, Amherst, Massachusetts.

ERASMUS, CHARLES J.
1961 Man Takes Control. Minneapolis.

FACULTAD DE CIENCIAS ECONOMICAS
1962 Estudio de Recursos Humanos de Nivel. Primera Parte. Universidad de Chile, Santiago.

FEREBEE, E. E.
1962 The Open Door. Rehabilitation Record, 3: inside cover.

FOSTER, GEORGE M.
1962 Traditional Cultures: And the Impact of Technological Change, New York.
GABALDON, ARNALDO
1965 Una Política Santaria. Publicaciones de Sanidad y Asistencia Social. 2 vols. Caracas.
GERRITSEN, WILLIAM D.
1964 An English-Spanish Glossary of Basic Medical Terminology in the Dialect of Northern New Mexico. Santa Fe, New Mexico.
GOMEZ, HECTOR ABAD
1964 Major Problems in Rural and Urban Areas Affecting Health in Colombia. Bogotá. (Mimeographed).
HANSON, ROBERT C. AND SAUNDERS, LYLE
1964 Nurse-Patient Communication: A Manual for Public Health Nurses in Northern New Mexico. Institute of Behavioral Science, University of Colorado. Boulder.
HOLLAND, WILLIAM R.
1963a Medicina Maya en los Altos de Chiapas. Instituto Nacional Indigenista. Mexico.
1963b Mexican-American Medical Beliefs: Science or Magic. Arizona Medicine. May. 89–102.
INSTITUTO NACIONAL INDIGENISTA
Acción Indigenista. Boletín Mensual del Instituto Nacional Indigenista, Mexico.
JILIBERTO DE GUEVARA, NINFA AND MUNIZAGA A., CARLOS
1966 Una Experiencia de Enseñanza de Antropología Social en la Escuela de Salubridad deSantiago, Chile. Boletín de la Oficina Sanitaria Panamericana, 61:219–229.
KARDEC, ALLEN
n.d. The Spirits' Book. São Paulo.
1951 El Libro de los Espiritus. Mexico.
KARDEC, ALLEN AND DELANNE, GABRIEL
1954 Los Fundamentos del Espiritismo. Mexico.
KELLY, ISABEL
1955 El adiestramiento de parteras en México, desde el punto de vista antropológico. América Indígena, 15: 109–117.
1961 Mexican Spiritualism. Kroeber Anthropological Papers, 25: 191–206.
1965 Folk Practices in North Mexico. Latin American Monographs, No. 2. Institute of Latin American Studies, Austin.
LAROCCA, JOSEPH M.
1962 Progress of International Research. Rehabilitation Record, 3: 3–6.
MADSEN, WILLIAM
1961 Society and Health in the Lower Rio Grande Valley. Hogg Foundation for Mental Health. Austin.
MARTINEZ, CERVANDO AND MARTIN, HARRY W.
1966 Folk Diseases Among Urban Mexican-Americans. Journal of the American Medical Association, 196: 161–164.
MARTINEZ, PEDRO DANIEL
1963 La enseñanza de las ciencias de la conducta en la Escuela de Salud Pública de Mexico. Organización Panamericana de la Salud. Publicaciones Científicas, 92: 31–38.
MENDIZABAL, MIGUEL OTHON DE
1946–1947 Obras Completas de Miguel Othón de Mendizabal. Vol. 6: 143. Mexico.
METZGER, DUANE AND WILLIAMS, GERALD
1963 Tenejapa Medicine: The Curer. Southwestern Journal of Anthropology, 19: 216–234.

MILLER, FRANK C.
1965 Cultural Change as Decision-Making: A Tzotzil Example. Ethnology, 4: 53–65.

MOLINA, GUSTAVO AND JIMENO, CLAUDIO
1966 Teaching Social Science Concepts in a Clinical Setting in Preventive Medicine. Milbank Memorial Fund Quarterly, 44, part 2: 211–225.

PANAMERICAN HEALTH ORGANIZATION
1964 Health Conditions in the Americas. Scientific Publications No. 104. Panamerican Health Organization. Washington, D.C.
1966 Health Goals in the Charter of Punta del Este, Facts on Progress. Miscellaneous Publications No. 81. Washington, D.C.

PAUL, BENJAMIN D.
1955 Health, Culture and Society. New York.

PEARSALL, MARION
1963 Medical Behavioral Science. Louisville.

POLGAR, STEVEN
1962 Health and Human Behavior: Areas of Interest Common to the Social and Medical Sciences. Current Anthropology, 3: 159–205.

ROEMER, MILTON
1964 La Atención Médica en América Latina. Estudios y Monografías. Unión Panamericana. Washington, D.C.

ROGLER, LLOYD H. AND HOLLINGSHEAD, AUGUST B.
1965 Trapped: Families and Schizophrenia. New York.

ROMANO V, OCTAVIO I.
1965 Charismatic Medicine, Folk-Healing, and Folk Sainthood. American Anthropologist, 67: 1151–1173.

ROUND TABLE CONFERENCE—1963
1964 Health, Manpower and Medical Education in Latin America. (Report of a Round Table Conference held at Beekman Towers Hotel, New York). Milbank Memorial Quarterly, 42: 11–66.

RUBEL, ARTHUR J.
1960 Concepts of Disease in Mexican-American Culture. American Anthropologist, 62: 795–814.
1964 The Epidemiology of a Folk Illness: Susto in Hispanic America. *Ethnology,* 3: 268–83.
1966 Across the Tracks: Mexican-Americans in a Texas City. Austin.

SAL Y ROSAS, F.
1958 El Mito del Jani o Susto de la Medicina Indígena del Perú. Revista de la Sanidad de Policía, 18: 167–210.

SAMORA, JULIAN et al.
1961 Medical Vocabulary Knowledge among Hospital Patients. Journal of Health and Human Behavior, 2: 83–92.

SAUNDERS, LYLE
1954 Cultural Difference and Medical Care. New York.

SAUSSE, HENRI
1952 Biografía de Allen Kardec. Buenos Aires.

SCOTCH, NORMAN
1963 Medical Anthropology. Biennial Review of Anthropology, Bernard Siegel, ed. Stanford.

SEPULVEDA, LUCIA, MONTOYA, CARLOS AND REGUENA, MARIANO
Una Experiencia en Medicina Integral. (Typescript).

SEPULVEDA, ORLANDO
1966 Research on Behavioral Science and Medicine in Latin-America. Milbank Memorial Fund Quarterly, 44, part 2: 52–69.

STEWARD, JULIAN, ed.
1946–1948 Handbook of the South American Indians. Bureau of American Ethnology Bulletin 143, Vols. 1–4. Washington, D. C.

TSCHOPIK, HARRY
1951 The Aymara of Chucuito: Magic. Anthropological Papers of the American Museum of Natural History, Vol. 44: 133–308.

VALLEJO, NILO AND GARCIA, GLADYS
1966 The Social Science Program in a School of Public Health. Milbank Memorial Quarterly, 44, part 2: 226–236.

VOCATIONAL REHABILITATION ADMINISTRATION
1964 Rehabilitation of the Disabled in Fifty-One Countries. Washington, D. C.

VOGT, EVON A.
1965 Review of: Medicina Maya en los Altos de Chiapas by William R. Holland, American Anthropologist, 67: 524–526.

WELLIN, EDWARD
1955 Water Boiling in a Peruvian Town. In: Benjamin Paul, ed. Health, Culture and Society. New York.
1966 Directed Culture Change and Health Programs in Latin America. Milbank Memorial Fund Quarterly, 44, part 2: 111–128.

WHETTEN, NATHAN
1948 Rural Mexico. Chicago.