THE SOCIOLOGY OF MEDICAL EDUCATION
SOME COMMENTS ON THE STATE OF A FIELD

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The general purpose of this paper is to review the state of a research field, the *sociology of medical education.* It is fully 15 years since the field became active, and one can now count at least seven attempts, each with the full thrust of major team research organization and support, to study the processes by which medical students selectively acquire the attitudes and values of the physician's social role. If one looks over all of these studies, seeking the patterns of origin, frames of reference, methods, and results, one finds a wide-ranging discourse on the problem. Up to this point, however, the patterns and polemics remain largely implicit, embedded in a considerable volume of separate research reports.

Some stocktaking is evident in two recent reviews[81, 94a] and several bibliographic reports.[94b, 95, 113] The view of each, however, is limited, centering on selected themes. Becker and Geer,[94a] for example, review mainly research on medical student culture, recapitulating the lines of inquiry drawn most completely in the particular research in which they were the principal investigators.[31] Bloom[81] surveyed only studies which related to certain attitudes involved in socialization for the physician's role. Freidson's bibliography is the most complete.[95]

The objective of this review is to seek a more broad and complete view of the trends and issues that are discernible in the sociological study of medical education in the United States. First, some of the origins of such research, both in medicine and sociology, are reviewed, and a brief historical account is given of the development of the major examples. Second, in the theoretical and empirical findings of the various researchers, it is asked what lines of convergence and disparity can be charted. What are the implications and guide lines for future research in the field?

I. SOME PATTERNS OF ORIGIN: A HISTORICAL VIEW

Interest in medical students' attitudes and attempts to measure them are not at all new or uncommon. As one writer has stated, "The medical students can be described by the most complete body of psychological measurements ever collected on individuals with such singular occupational interests."[103] For the the most part, however, the emphasis of such research has been on the individual and his "traits." The school, at least implicitly, was conceived of as secondary to the student. Research sought to identify the "best" student, that is, the student whose individual qualities "fit" the demands of medical school and, assumedly, the medical profession. This type of conception, moreover, was not reserved for studies of medical education. It was generally the case in research on students at all levels of secondary and higher education. Its most direct expression was in the study of selection which, undoubtedly, is the most highly developed type of social science research on education.[20c, 65, 96, 97]

Beginning soon after World War II, however, inquiry concerning medical students took on a new dimension. It was the first time that sociologists were assigned a major share of the responsibility for such research. Even in cases where they were left out entirely or given only a token share of the task, the school as the environmental context of learning was virtually always included in the conception of the problem. *Student culture* came into its own as a study variable.

The sources of this new awareness of the importance of the school as a learning environment have been the subject of much discussion. Merton, in one of the most detailed explorations of its origins, found lines of development in both medicine and sociology, which, after independent histories, converged at about mid-century.[20a] From each, he extracts five main sources of interest in "the process of [medical] teaching and the educational environment they [medical educators] are creating for students." In medicine, there were the following:

1. The great and possibly accelerated advances of medical knowledge which raise new problems of how to make this knowledge an effective part of the equipment of medical students;

2. Stresses on the allocation of the limited time available in the curriculum which lead to continued review of the bases for one rather than another arrangement;

3. Renewed recognition of the importance of the social environment, both in the genesis and the control of illness, together with growing recognition of the role of the social sciences in providing an understanding of that environment;

4. A commitment to scientific method which calls for replacing howsoever skilled empiricism by the beginnings of more systematic and rational analysis of the process of education;

5. As a precipitating factor, substantial innovations in medical education which require systematic comparisons of the objectives of these innovations with their actual outcome.[20a]

The "co-ordinate developments in sociology [which] have brought about concerted beginnings of sociological research on medical education" include:

1. The marked and cumulating interest in the sociology of the professions which includes, as a major component, studies of professional schools;

2. The growing utilization of social science as composing part of the scientific basis for the provision of health care in contemporary society;

3. The considerable recent growth in the empirical study of complex social organizations, among which schools constitute an important special class;

4. The similar growth of interest in the process of adult socialization in general which, in application to the field of medicine, is concerned with the processes by which the neophyte is transformed into one or another kind of medical man; and

5. The recent advances in methods and techniques of social inquiry which make it possible to examine these subjects and problems by means of systematic inquiry.[20a]

Berry,[80] Darley,[88] and Ham,[56] although they agree with Merton's general thesis of converging developments, place more emphasis on the influence of changes in medical practice. Lee states the more medical interpretation of origins in the following way:

> The logarithmic growth in scientific knowledge and the rapid pace of social change, among other factors, have altered many aspects of the practice of medicine. Within the medical schools the impact of the changing times has been felt in a number of ways: increase in research activities, accompanied by comparable increases in financial support, particularly from agencies of the federal government; growth of full-time faculties; changes in the nature of patients available for teaching and in the patterns of disease; increase in specialization as knowledge increases; growth of the specialty boards and their influence on graduate medical education; growth and strengthening of the social and behavioral sciences; unpredictable and incompletely understood changes in the number and quality of applicants to medical schools; and increasing concern with the need to define the attributes, responsibilities, and educational needs of the physician of the future. In the midst of this climate of change, it is hardly surprising that medical schools have been undergoing an unprecedented period of self-scrutiny, reappraisal, definition of objectives, and experimentation.[106]

The new focus on the student and his social environment which emerged was closely associated with a revived sense of the importance of the patient and his social environment. The educational

experiments, which proliferated in so many varieties and in so many places in American medical education, were joined together in their motivation as much toward the improvement of medical care as they were toward the improvement of medical education. More precisely, the intent was to assure the patient a type of medical care which, in addition to the best scientific techniques, would include concern about the emotional and social factors in his illness. They were designed as experiments in teaching both attitudes and skills in the "human" side of medicine.

This dual interest in the student and the patient, especially at its beginning, was expressed in programs of comprehensive care which experimented with both the implementation of a concept of medical practice and how it should be taught. This was the particular innovation which, in retrospect, appears to be the most important "precipitating factor," in Merton's formulation, for the development of a sociology of medical education. In keeping with the general spirit of the "climate of change," the question which was asked of the behavioral scientist was: Do our new programs for the teaching of comprehensive care achieve the effects on student attitudes and skills that are intended? Two outstanding examples are the Cornell Comprehensive Care and Teaching Program [20b, 41] (CC&TP) and the General Medical Clinic (GMC) program at the University of Colorado School of Medicine.[102]

Parenthetically, it is notable that the readiness to change in itself was not innovational in medical education. It was the systematic study of the effects of new educational programs which constituted the major departure from the past. Previous comparable programmatic changes in medical education claimed to be experiments, but, as Dietrick and Berson asked:

> Where, however, is there evidence of a planned, scientific approach, in which the results are measured by their effect upon the student and in comparison with carefully established controls? Little or no evidence is to be found throughout the country of real experiments in medical education, even though experimentation and research are part of the armamentarium of medicine.[89]

Programs like the Cornell CC&TP and the Colorado GMC ap-

peared almost as direct answers to the latter question. Both were unsparing in the effort to apply the experimental method in all its rigor and systematic control to the complex problem of evaluating educational practice.

The attempt to add the standards of scientific inquiry to problems of medical education did not confine itself to the experimental method, however. Even in the Cornell studies, a before-and-after study of experimental and control groups of students was reassigned from its early prominence as the primary research design to a position of only equal importance with others. The Cornell CC&TP, it was decided soon after the study began, was more likely to be understood in the full context of the school as a four-year experience than as a disconnected six-month program. Consequently, although the carefully constructed experimental design was continued as one step in the evaluation of the program, there were added observational, interviewing, and questionnaire studies of the school as a social system, covering all four years of student experience. Among the widely ranging research styles which have developed as part of the continuing studies of medical education at Cornell are the analysis of the teaching hospital as a special type of bureaucracy,[8, 11] the intensive scrutiny of particular aspects of professional socialization such as "training for uncertainty" or "detached concern,"[20h] and selected conceptions of the student's attitudinal development studied by panel questionnaire.[20e, 20f, 20g]

At about the same time as the Cornell and Colorado studies got under way, early in the 1950s, interest in the study of the whole four-year student experience crystallized at two other medical schools, Western Reserve and Kansas. At Western Reserve, the impetus again came from an educational experiment, but, in this case, the entire four-year curriculum was revised. Under such circumstances, interest in the whole of the student's experience would seem to follow logically. At the University of Kansas Medical School, on the other hand, no particularly novel change was being attempted at the time when the research was started. Nevertheless, the Kansas study became one of the most ambitious

—a detailed case study of a social institution based on extensive participant-observation and interviewing.[31]

At Western Reserve, a different type of case method became the major tool of research. Under the direction of Milton Horowitz, a psychologist on the medical school's faculty, 20 students were selected on the basis of sociometric ratings. A detailed analysis of data on these students, focused on the four years at Western Reserve but including follow-up studies five years after graduation, was published recently.[58] Data on medical student experiences at Western Reserve were also collected by the Bureau of Applied Social Research of Columbia University. However, these data for the most part have not been published with specific reference to the Western Reserve experiment, but have instead been incorporated in comparative studies of more specific and limited questions about the process of becoming a doctor.[19, 20c, 20f]

Another variant of the effort to look at the medical school as a total four-year experience began in the early 1950s at the University of Buffalo School of Medicine. The Buffalo Project in Medical Education, as it was called, became a large-scale self-study, in which nearly 100 faculty members actively participated.[110] The frame of reference for this work was derived from educational psychology. The School of Education of Buffalo University worked in close collaboration with the project. Nathaniel Cantor, a professor of sociology in the University's Liberal Arts College, was a primary source of inspiration and direction.

Reflecting the influence of the education specialists, the Buffalo project became essentially a study of teaching techniques. The summary publication is both a critical appraisal of the prevailing methods of medical education and a statement of recommendations for improvement. The student is the focus. The assumptions emphasize how teaching can and frequently does "get in the way of students who want to learn, rather than help them in learning."

The five research programs which have been discussed up to this point were all organized and conducted by research teams, and were focused on a single institution. The Columbia studies

could be considered an exception because they were conducted in three medical schools, Cornell, the University of Pennsylvania, and Western Reserve. However, Cornell was the central focus of study, and the Cornell CC&TP the point of departure for all of the Columbia group's research.

These early researches barely had time to gather their full momentum when a shift toward large-scale surveys occurred in new research on medical education. The Association of American Medical Colleges (AAMC) initiated a series of inquiries on national samples of students and faculty members. Specifically, these surveys were instituted for the collection of information to be used at annual teaching institutes sponsored by the AAMC.[61, 65, 66] Some were designed to study the different disciplines and phases of the medical curriculum. Others studied the major problems which, it was agreed, were at the source of the trends toward change which followed the war. Among the latter, one study represented the continuing interest in the type of applicant and the growing concern over apparent changes in the quality of applicants to the medical school.[65] Another survey was concerned with the medical school's social environment.[66] This direction of interest was sustained by the creation of a permanent staff of research personnel in the AAMC which has engaged in continuing studies.

Another example of this interest in large sample surveys is the work of a group of behavioral scientists at the University of North Carolina School of Public Health. Choice of specialities was the focal problem of this group's research based on a sample drawn from nine medical schools. Most particularly, they studied the attitudes toward public health as a career, but a variety of other questions were included.[85, 86, 87]

More experiments in medical education, in the meantime, continued to be started. Among them were programs of comprehensive care teaching, but, almost as though they were content to await the results of the Cornell and Colorado studies, they did not include research on their effects.[106] Toward the end of the decade, another shift occurred in the type of new teaching experi-

ments; they expressed a renewed and revised relationship between the professional school and the university. At Johns Hopkins, Northwestern, and Boston universities, the premedical and medical courses were integrated; early acceptance (in Boston's case, from the time of high school graduation) and the possibilities of a shortened total period of higher education were included.[106]

Lief, at Tulane University College of Medicine, added still another dimension which merits at least some mention in the context of this discussion. Lief and a group of psychiatric colleagues have been conducting longitudinal studies of the emotional development of medical students.[109] The subjects include both "normals"—that is, students who do not ask for and are not referred for psychiatric treatment—and students who have emotional problems severe enough to bring them into psychiatric treatment. Unlike similar studies, the Tulane project has always included in its field of concern the school as a social environment, and, to a degree, collaboration with sociological consultants is an important adjunct to the research procedure.[108]

This brief review of the origins and major examples of research in medical education during the postwar period points up several identifying characteristics:

1. Although the *medical student* was the central subject of research, it was more specifically the doctor-patient relationship that was the target of new trends in medical education; the nature, sources, and changes in student attitudes toward this relationship were the main problems of inquiry.

2. Experiments in medical education, especially programs devoted to the goals of *comprehensive care,* were the earliest expression of such new trends, as they were also the initial precipitants for social research in this field.

3. Over a 15-year period, the emphases of both education and research on the educational process shifted. The emphasis on an integrated view of the whole patient by the teaching of comprehensive care in the last year of medical school was followed by the integration of the preclinical sciences at the beginning, and then by the effort to express an integrated view of all phases of the medical school in a

totally revised curriculum. The integration trend continued with, among others, programs that joined the premedical with the medical, and new relationships between the professional school and the university.

II. THE RESEARCH FINDINGS: SOME TRENDS AND ISSUES

This discussion now turns to the question of what, in more substantive terms, were the results of these varied activities by behavioral scientists toward a greater understanding of the processes of medical education? The answer, it will be proposed, takes the form of three interrelated "dialogues" concerning socialization for the physician's role.

The first issue which appears to polarize into a two-sided controversy concerns the *status* of the student within the medical school community. Is he most essentially a student, required to prove himself in a rite-of-passage that emphasizes a trial by intellectual ordeal? Or is he a physician-in-training, a junior colleague to the medical professional, and therefore already the partial beneficiary of rights and privileges of membership in the profession, which are gradually increased to full measure on a graduated scale?

The second dialogue concerns the effects of the medical school experience on specific values and attitudes that are assumed—or demonstrated—to have relevance to the doctor's role. For example, in terms of generalized attitudes toward human relations, what are the characteristic beliefs of the medical student when he enters medical school, and what happens to them as he moves through the school? Does he, as one group of studies contends, change from an idealist to a cynic? Or does he, as another group of studies proposes, go through a process of social maturation which is more of a developmental process than a change of specific attitudes? If it is a developmental growth experience, is it in the nature of the correction of naïve stereotyped motivation to more specific and realistic conceptions of the doctor's role? Or is it a complex and often indirect learning of functional attitudes and behavioral attri-

butes that relate directly to the special demands of behavior in the professional role?

The third dialogue is based on the relationships between the medical school and the medical profession. Does the student receive a professional education in medical school which represents directly the standards and realities of his future professional role? Or is the school mainly a step which is limited in its function to establishing a groundwork of knowledge and skill, to be succeeded later by some form of training by the profession of its new members in the standards of professional behavior?

These dialogues are, of course, closely interrelated; their issues overlap. Nevertheless, for purposes of the analysis of trends in the sociology of medical education, each provides a separate framework for the review of the results of research in this field. As such, each will be discussed in turn in the remainder of this paper.

The Status of the Medical-Student: "Boy" or "Student-Physician"?

Although only projects in which a sociological contribution is important have been chosen for review here, the degree of involvement by sociologists themselves varies considerably. The emphasis appears to divide evenly between sociology and psychology.

It is within the dominantly sociological studies that the polemic discourse about the status of medical students is stated most clearly and in the fullest detail, argued by two of the oldest and most renowned research centers in sociology, the Columbia University Bureau of Applied Social Research and the University of Chicago Department of Sociology. Both organizations have a long-standing interest in the study of occupations in general and, more specifically, in the processes through which individuals acquire professional roles. Each has become identified, however, with a quite distinct approach to the study of this problem, and in their work on the sociology of medical education, the dialogue between them has intensified.

For Merton and his Columbia associates the medical school is

conceived of as an institution *within* the medical profession. His emphasis, therefore, is on finding what he calls the "spectrum of medical values and norms" that are incorporated in the medical school, and on the processes whereby the school functions as the basic institution for initiating and conveying to its future members the "body of shared and transmitted ideas, values and standards toward which members of the profession are expected to orient their behavior."[20a] This highlights the links between the medical school and the medical profession. The results are evident in the operational steps of the Columbia group's investigations. Separate studies are conducted of the medical student's developing "self-image as a physician," of his attitudes toward the doctor-patient relationship, of his attitudes toward the profession and the community. The view is always longitudinal, cast in the framework of a hypothesis of socialization in which the medical school is the "middle term" of an orderly developmental process.

The Chicago group, on the other hand, looks at the medical school as a more separate and distinct institution in its own right. It is conceived of as an institution of higher learning—as a graduate school generically rather than primarily a professional school. Acknowledging the fact that the medical school is *a step* in the socialization of the physician, the Chicago group avoids the assumption that it is a linked step in a direct and orderly developmental process. The methods of study, emphasizing participant observation in an intensive case study of one medical school, reflect directly the theoretical emphasis on structural determinants of behavior in social organization. In its application, the method of the Chicago group, as in past studies of other types of institutions, frankly seeks "disparities between aspirations and realities."[31]

In spite of these differences in approach, there is a striking similarity in many of the descriptive findings reported by the two groups.[81] Their interpretations of student status, however, diverge sharply. The Chicago group shows the student as a "boy-in-white," in a deliberately contained subordinate position separated from the faculty by a high social barrier, and forced to undergo a

difficult trial-by-ordeal before he is allowed to qualify for entrance into the profession. The Columbia studies portray a faculty approach to students that is equalitarian, in which the student is already accepted as a colleague—a "student-physician"—who is guided as rapidly as possible toward full partnership in medicine. Both studies describe a student society or subculture. The reported functions of these student cultures, however, are again very different, and the contrast is associated with the type of status ascribed to the student role.

At Kansas, for example, the students are reported to organize a world within the school but separate from it. This student culture is, at least to some extent, a secret society whose members "play it cool"—that is, they present one face to the faculty, that of acquiescence and co-operation, acting in the interests of academic survival; in their own private world, they are more independent and critical.

By contrast, the Columbia research describes a student society in which most of the control of behavior derives from the student's "little society" rather than from the faculty. Tightly self-regulated, this student society is described as one of the most significant forces that helps to shape the attitudes of "doctors-in-training."[20h] The overriding function is to maintain the communications network of the school, clarifying standards and controlling behavior based on norms that are mutually held by students and faculty.

Both pictures of the student culture suggest comparisons with descriptions in the literature of other types of organizational structure. More significantly, the difference in their views, the issue that is central in their dialogue, is closely analogous to similar polemics concerning the status and functions of the key superordinate-subordinate relationships in factories, prisons, hospitals, and colleges. In the study of industrial relations, for example, one finds two contrasting theoretical postures toward the management-worker relation that compare closely with those drawn above for the student-faculty relation.[119,134] Etzioni found similar opposing models in the study of hospitals.[127] Levinson and Gallagher

extend the analogy to include the residential college.[188] Both Etzioni and Levinson draw extensively from the work of Goffman who compares mental hospitals with prisons and other forms of what he calls "total institutions."[128]

The issue has been argued most fully in the study of industrial relations. An excellent summary by Etzioni describes the two points of view as follows:

> The study of industrial relations is more or less split into two camps. On one side are the advocates of the human relations approach, including disciples of Elton Mayo and Kurt Lewin.[119,136] On the other side are the scholars who object to the human-relations school, which they name "managerial sociology," and which they criticize for being manipulative, biased in favor of management—for example, earlier studies ignored the role of the trade unions—and unrealistic.[121,132] Another way of putting the difference is to say that the human-relations school is for "peace in industry," harmony, and "understanding" between the employer and employees, while the opponents emphasize the objective significance and positive function of industrial conflict. The human-relations people emphasize two-way communication, while the opponents stress the role of the trade unions. The human-relations school suggests therapeutic interviews and participation in decision-making; the opponents point to economic, political, cultural and other "real" differences between workers and management.[127]

Stated another way, the human-relations school finds the major determinants of behavior in the factory are in the interpersonal relations between superordinate and subordinate members; the opposing view sees the structural determinants as most significant. The former argument brings the two groups together in common goals; the latter separates them by distinctive interests. In the former, a balance of smooth and constructive interaction is maintained by keeping the meaning of the relationship clear and preventing obstacles from arising in communication; in the latter, bargaining between groups occurs, asserting rather than removing differences, and sparring for advantage.

But a student is not a worker, nor is a faculty directly comparable to management. There is an obvious analogy between the two positions Etzioni describes in industrial relations and those of medical education presented by the Columbia and Chicago studies, but there are equally obvious questions about the appropriateness of the analogy. As Etzioni warns, "new studies follow in the steps of organizational research in other areas . . . [and] such a transfer of ideas, concepts, and perspectives from one area of study to another benefits both the new studies and the theory of organization itself. But there is a constant danger that the analogy will be overdrawn."[127]

The analogy is most tenuous in the comparison of the student's role in the medical school and similarly subordinate roles in other organizations. The student, after all, *is,* in formal purpose, the chief product of the medical school; he is not the laborer in a production process. Nor is the student like the patient in the sense of being an involuntary member of the institution, placed there by forces that are beyond his control; he is a voluntary member of the medical school after a long and difficult struggle to qualify for admission. Similarly, the function of the school is not a combination of incarceration-care and treatment-rehabilitation, just as it is not production for profit. On what basis, therefore, can the analogy be justified?

The answer appears to be in the dynamic patterns of behavior which reflect the functions of the medical school. Notwithstanding the various differences of purpose and of structure, there are like processes which otherwise quite diverse institutions share. For illustration, Levinson and Gallagher compare the key subordinate role—the inmate member—of the hospital, prison, and resident college. All three are designed to serve the needs of the greater community by *changing* their inmates *psychologically.* This conception is explained more fully as follows:

> There is more than analogy in the parallel between the educational goals of the college and the therapeutic-correctional goals of mental hospital and prison. All three sets of organizations strive, in ways that vary as much within each set as among them,

> to foster personal growth and learning in character, in self-conception, in competence, in psychosocial resources that will make a difference in the postgraduation lives of the resident members. The custodial-care functions correspond to an equal degree. As a member of the college community, the student is strongly dependent on its welfare provisions (housing, recreation, medical care, and the like). He is also strongly subject to its system of authority and control (norms governing admission, expulsion, academic and communal performance, and graduation). The incarcerative function is usually less pronounced; no one becomes a college student via legal commitment. However, some students may experience college as an incarcerative, constricting environment to which they have in effect been committed by their parents.[133]

The medical school, it may be contended, is one step further removed from the analogy than the residential college described by Levinson and Gallagher, because of its high degree of voluntary self-selection by students, the high standards of the school and consequent competition for entrance, and the specificity and high social value of its objectives. Yet, as one looks again at the dialogue about medical student culture that is presented by the Chicago and Columbia studies, the parallel with other areas of organizational analysis persists, and with it the suggestion that some resolution of the issues involved might be gained from a study of the analogy.

A further look at medical student culture reveals several features about which both the Columbia and the Chicago studies agree:

1. It is first organized in response to an academic challenge. The students join hands in a collective effort to meet more effectively the scholastic demands of the first year of medical school, and continue in a system of mutual support with student peers throughout the four years of medical school.

2. Once organized, this student society becomes general in purpose, growing beyond the specific point of departure which is an intellectual—or scholastic—stress, and becomes a moderating force for

a wide range of behavior. It becomes, in other words, a whole society in small scale.

If one looks at descriptions of inmate subcultures in other organizations, there invariably appear these two features: a collective response by peers in a subordinate status to a stress or challenge that is perceived as orginating in a stratum of superiors, and the subsequent organization of this peer group into a whole subsociety with various functions.

The most detailed descriptions of student peer societies are found in studies of the high school. Clark,[125] for example, finds three types of subculture in the secondary school: 1. the fun subculture, 2. the academic subculture, and 3. the delinquent subculture. Coleman[126] finds that the fun subculture is valued most highly, by and large, in adolescent society, and, like Clark, he emphasizes the antagonism between the values of high school students and those of the school. Gordon,[129] on the other hand, suggests that these apparently divergent values, represented in the fun culture of the adolescents and the academic values of their school superiors, can be mutually supportive.

The medical school, by comparison, is strongest in its academic subculture, precisely where the adolescent society is weakest. The various studies agree that the medical student joins hands with his peers mainly in order to survive and perform well in his academic work. This would seem to be a crucial point of difference in the comparative study of these institutions, for presumably in medical school the values of the student culture are close to, or identical with, those of their superiors; both are motivated by academic considerations. Moreover, the medical student is a young adult who is being educated for membership in the society of his teachers immediately following his graduation from the medical school. The status gap between him and his superiors is, therefore, considerably more narrow than that of any of the analogous relationships which have been mentioned.

Thus, on an a priori basis, reconstruction of the medical student situation leads to the prediction that the student subculture will not have any basis for the secret type of organization that is so

commonly found in analogous organizations. This is exactly what the Columbia studies conclude. Yet the Chicago group's picture of medical student society contradicts this prediction, and asserts that medical students, like their counterparts in other organizations, react to a perceived psychological assault by organizing for mutual defense against the "enemy"—the faculty. How can one reconcile these contradictory interpretations?

One must consider the important differences that exist between the medical schools which were the main subjects of investigation by these two groups. Kansas is a state-supported, Midwestern school with a traditional curriculum and educational philosophy; Cornell is a private, Ivy League school, oriented toward experimentation with the traditional medical curriculum. Becker and his associates, however, reject this as an explanation of the differences between their interpretations and those of the Columbia studies. They claim that Kansas is a "typical" medical school, and its student experience is, therefore, characteristic of medical students in general. In their own words, they specifically take exception to the Columbia interpretations, as follows:

> There are two views commonly held concerning what happens to students as a result of their schooling. One is that they are socialized into a professional role. Mary Jean Huntington[20f] has shown that medical students are more likely, with each succeeding year in school, to say that they thought of themselves as doctors rather than as students on the occasion of their last contact with a patient. She interprets this to mean that medical students gradually develop a professional self-image in the course of their medical training. Renée Fox[20h] has analyzed the development of the medical student as a process of learning and assimilating the traits the student will need to play the role of physician once he has left school. For instance, she argues that students get a thorough training in dealing with the many areas of uncertainty they will have to face as physicians and that medical schools, whether purposely or not, are organized to make sure that students get that training. Training for uncertainty is only one of the kinds of training students get in preparation for their future professional role, in Fox's

view. Other areas of such training are detached concern, time allocation, and so on.

> We have not found this framework useful in analyzing our data on the Kansas medical student. . . . The Kansas students do not take on a professional role while they are students, largely because the system they operate in does not allow them to do so. They are not doctors, and the recurring experiences of being denied responsibility make it perfectly clear to them that they are not. Though they may occasionally, in fantasy, play at being doctors, they never mistake their fantasies for the fact, for they know that until they have graduated and are licensed they will not be allowed to act as doctors.[31]

Miller,[110] in his report of the Buffalo self-studies, appears to support the Chicago interpretation. He finds evidence that "suggests somewhat sadly that the relationship between student body and faculty is characterized more by suspicion and distrust than confidence and respect." The result is termed, "that passion for anonymity which characterizes the American medical student, a passion born of the belief that his progress toward the goal of graduation is less likely to be blocked if he remains essentially unidentified for four years." This is eloquent testimony to support the picture of a medical student group, isolated in a conflict of interest with his faculty, forced underground but "playing it cool."

Even at Western Reserve, a medical school which has revolutionized its curriculum for the purpose of bringing the student into the closest possible partnership in learning with his faculty, Horowitz reports, "Although very few students who enter . . . fail to graduate, many appear to be preoccupied with fears of not graduating."[58] In this case, however, though the initiating stress appears to be the same at Western Reserve as at other medical schools, there does not appear to be a collective student response such as Becker describes. Unfortunately, the published reports of Western Reserve do not allow a full analysis of this question. Horowitz never makes clear what form the student society takes at Western Reserve. As far as it goes, however, his report suggests that a minority of students do respond defensively to the

school program, but that the prevailing climate among the students maintains the feeling of mutual learning with the faculty.

The paradox may be explained by the variance of meaning that is possible concerning the same goals. More specifically, there is no question that the medical school is an institution which, quoting Levinson and Gallagher, "strives . . . to foster personal growth and learning in character, in self-conception, in competence, in psychosocial resources that will make a difference in the post-graduation lives of the resident members."[133] Nevertheless, it remains possible to define such things as "growth" quite differently, especially from different status positions in a social organization. What to the inmate is an expression of growth and self-integrity may be for his superior a sign of rebellion or, at the very least, "resistance." Moreover, the division of a community into two separate worlds need not follow only from such a clear difference of points of view; it can just as easily be a reaction to an ambiguity of values in the institution.

Miller presents the latter type of explanation in a discussion of how students can be out of phase with the value-climate of a given school. "A student of high intellectual ability," he writes, "may fail to do well in medical school because his pattern of interests and values is at sharp variance with the predominant pattern of his school. The student who deviates too sharply from this pattern may manage to succeed, but only with the agony that accompanies bucking a system."[110] To this one may add that, if enough students in one school find themselves "bucking the system," they are very likely to respond collectively by organizing their own sub-world within the medical school, and by using this world for defense against what they see as the psychological assault of the system. This may be going on while the institution in its formal purpose is dedicated very sincerely and energetically to the goal of growth and development for its students. Miller does not refer to such informal student social organizations. Implicitly, however, he would seem to discount the effectiveness of student defenses in out of phase learning situations; he lists and underscores a number of studies about academic failure that is primarily caused

by the placement of a student in a school with whose pattern he is out of phase.[110]

Miller's argument directly contradicts the contention of the Chicago group that Kansas is a "typical" medical school. Miller presents evidence to show how three medical schools, equal in size and type of support, differ significantly in the type of students each admits.[66] Christie and Merton,[5] on the basis of limited but convincing data, show differences in the value climates of three medical schools. In a very thorough analysis of values among both students and faculty at 14 medical schools, Johnson[104] documents further the existence of important differences among the value-climates of medical schools.

What the Chicago studies appear to achieve successfully is the portrayal of a type of medical school culture—a type which, if not typical of most American schools, is an important representation of what can and does happen under given conditions of education. Moreover, there is considerable evidence to suggest that the type of environment which Becker and his associates describe at Kansas is common in American medical education. At the same time, the picture of "student-physicians" which the Columbia studies present possesses at least equal validity as a type of experience which can and does occur in American medical education.

If these conclusions in support of the validity of both views are justified, the issue between them is no longer *which* is the *most correct,* but *what are the effects* of each on the socialization of the medical student in the social role of the physician? It seems appropriate at this point to introduce a separate polemic, at least for the purposes of a review of research trends. What are the effects on medical student attitudes of medical school cultures?

Attitudinal Learning: Change or Maturation

Three decades ago studies of the effects of education on student attitudes seemed to establish with finality the importance of the school in the making and changing of social values. The apparent success in such a complex measurement task—Newcomb's study of Bennington College is perhaps the outstanding example[135]—

produced a widespread optimism and faith in the concept of attitude itself as a tool of the new sciences of behavior. "The concept of attitude," Gordon Allport said at the time, "is the most distinctive and indispensable concept in contemporary social psychology."[118]

Today this picture is considerably altered. Interest in the effects of education on student attitudes is more active than ever at all age levels, but earlier certainties about the source and directions of such influence have yielded to doubts. There is indeed a doubt whether, at the higher educational level, schools have any significant influence at all on student values. Jacob[130] articulated this doubt in a comprehensive survey of research on college student attitudes. Moreover, a considerable question has been raised about the methodology of attitude research. Barton,[120] for example, presents a sobering inventory of the complexities of such inquiry in his critical appraisal of both Jacob's work and the field in general.

Looking back, it now appears that some of the early success in attitude study was related to the clarity and relative simplicity of the value-controversies of the time. The preoccupation of the world between two wars focused on political and economic issues. In the New Deal era, the attitudes that were the subject of primary concern in attitude studies were those of liberalism-conservatism conceived of as political-economic in their content. The meaning of these terms was unambiguous, both in the minds of people generally and in the instruments that were designed for their measurement.

The growth of national socialism and communism abroad rendered earlier concepts of liberalism-conservatism obsolete.[124] In particular, the German brutality and inhumanity toward the Jews and the Nazi cult of Aryanism introduced the belief that a characterological factor was perhaps the most important index to the generalized conception of liberalism-conservatism. "Authoritarianism" replaced politico-economic conservatism as the primary target of attitude research.[117]

The most recent decade has been a severe test for all the earlier conceptions of attitudes. The belief, once so assured, that generalized

attitudes exist and can be measured as valid indexes to behavior has been battered on the reefs of numerous replication studies. The issue has not been resolved, but a trend away from the search for general attitudinal factors and toward problems of more limited scope appears to exist.

The study of attitudes among medical students fits the latter mold. It is noteworthy that very little work has been done in the effort to identify tendencies toward liberalism-conservatism in the education of physicians, in spite of the continuing and increasing public interest in precisely such questions. The growing interest of the public in the economics of medicine, in its professional organization, and in its participation in political processes is not yet reflected in attitude studies of medical students and doctors.

The central question of research on medical student attitudes—and such research has never been more active—appears to be how students will behave with patients. As the first section of this paper asserted, the early interest of medical educators in the social sciences was precipitated by new educational programs which, most frequently, contained as a major objective the teaching of both skills and attitudes in the broadened range of interpersonal relations that are part of modern comprehensive medicine. In addition to this concern about whether new programs were working as intended, medical educators suspected that their more traditional educational approaches were influencing students in ways that were unintended. More precisely, they feared that, out of overconcern for the science of medicine, medical education was dehumanizing future physicians.[81] To test both the fears and the hopes, a variety of attitudinal studies were launched.

At the outset, such studies followed the pattern of earlier attitude research. A generalized attitude was postulated, and the effort in research was to measure the incidence and change of such an attitude during the years in medical school. Eron, [90, 91, 92] for example, developed a scale of "cynicism-humanitarianism," based on the Levinson-Sanford scales of authoritarianism, and applied this measure in a longitudinal study of medical students. Cynicism, in this study, was defined as a "contemptuous disbelief in man's

sincerity of motives or rectitude of conduct, characterized by the conviction that human conduct is suggested or directed by self-interest or self-indulgence."[90] Eron compared performance on this scale among medical students, nursing students, and law students. He followed the same group of students through professional schools, repeating the measure, to find if changes occurred.

In brief summary, "Eron's findings present a picture of increasing cynicism among medical students as they progress through school, whereas law students' and nurses' attitudes decrease in cynicism."[81] Attention should be drawn, however, to the fact that law students and medical students begin their professional studies with quite different attitudes—law students are typically quite cynical and medical students, humanitarian; but they end with about the same level of cynicism in their attitudes, as measured by Eron's scale.

Although the meaning and validity of Eron's scales have been challenged, corroborative findings have been reported, using different instruments, by Christie and Merton,[5] Nathanson,[39] and others. That something in the feelings and beliefs of medical students about interpersonal relationships does actually change is indicated strongly by this type of evidence. Just *what* has changed, however, has been the subject of further inquiry.

In part, this search has followed the directions set by the earliest models of attitude research. Scales and "tests" and the internal analysis of this single main source of data are the keystones of the methodology. Gordon and Mensh,[98] for example, used such an approach in the study of a "large, western medical school." They administered the Survey of Interpersonal Values (SIV), "a brief forced-choice test designed to measure the relative importance which one ascribes to each of six factored interpersonal value dimensions." Comparing freshman with senior responses, they concluded that the study "confirms the findings of other investigators that from the first year on, being benevolent, in the sense of wanting to help other people, becomes decreasingly important to the medical student." In this type of study, the trait, often called a "factor," is the important thing. As in so many similar studies,

attitude change is defined statistically, based on some general attitudinal measure which is nonspecific to the learning environment being studied. By inference, the learning environment is the significant independent variable.

This same basic design of study was also applied to large national samples, especially as reported by Schumacher.[74, 75] He added, however, more elaborate analysis, such as factor analysis,[74] as well as the cross tabulation of actual background data.[72]

The meaning of such findings for the process of becoming a physician continued to be questioned, however. That medical students appeared to change their expression of feelings about people as they moved closer to the practice of medicine was demonstrated repeatedly on general measures of interpersonal values. That such a change was a valid indication of the medical schools' functioning in some way to make cynics of idealists, and therefore to dehumanize the approach of future physicians toward their patients, was not at all clear.

Becker and Geer[28] challenged this proposition outright. The fate of idealism in the medical school, they asserted, was much the same as the fate of idealism elsewhere. Like their counterparts in the rest of the society, Becker and Geer argued, medical students correct youthful and naïve stereotypes toward a more realistic and more specific set of perspectives. For a doctor, this growth toward realism is especially necessary if he is to be effective as a physician. Therefore, what appears to be a harmful change of attitude is actually part of a functional learning process.

Fox [20h, 108] joins Becker and Geer in describing a developmental process where others have spoken of change from one attitude to another, but she describes a more purposeful and specific maturation. Rather than the correction of naïve stereotypes, the process she describes is a patterned experience built into medical educational situations which produce attitudes specifically fitted to the doctor's role.

Other efforts to bring the inquiry closer to the specifics of medical education were tried. Perhaps the most elaborate was the Hammond and Kern study of the University of Colorado

School of Medicine.[102] This was a five-year project, conducted by an interdisciplinary team of psychologists, sociologists, and doctors of medicine. Many different techniques were utilized, largely self-constructed with reference to the specifics of the medical school situation and the objectives of the study. The design for research was set up along classic experimental lines.

Unfortunately, the experimental design was marred by the failure to control the types of patients who were treated by the experimental and control student groups. In general, this study seems overdesigned, and overanalyzed. Its findings are consequently disappointingly sparse.[116]

A full report of the effort to use the experimental model for the study of comprehensive care teaching at Cornell is in preparation. Preliminary papers, however, reveal that the most careful efforts were made to derive attitude measures from the situation itself, and with reference to the full context of socialization for the profession.[8, 12, 20b, 20i, 20j] Indeed, with the evaluation of the Cornell CC&TP as the point of departure, the Cornell studies as a whole take shape as the most thorough institutional case study of a medical school. Although no single picture of the institution has been drawn that compares in its descriptive detail and unity to the monograph by Becker and his associates, a variety of methods have been thoroughly applied, including participant observation, questionnaire and interview surveys, and sociometric studies of both students and faculty.

In the Caplovitz study of the faculty,[3] and the work reported by Christie and Merton,[5] particularly, one can discern the turning of a full cycle in attitude research beginning and ending with the Newcomb design for inquiry. In these latter reports of the Columbia group, the attempt is made to study "attitude climate" much as it was defined originally by Newcomb but with the benefit of refinements in technique that have been developed during the intervening 30 years.

It is not possible within the limits of this review to give these studies of medical student attitudes the full measure of critical analysis they deserve. The summary opinion is offered that an im-

portant contribution to social psychology has been made by a series of researches which, from various metholodgical postures, converge in the conclusion that a developmental or maturation process is part of education for the professional role. Studies of attitude traits, no matter how sophisticated in technique, fail to achieve their purpose if methods are not included which define their meaning within their relevant social environments.

The School and the Profession

Much has been taken for granted about the relationship between the medical school and the profession it serves, but there has been comparatively little study of this relationship. Although "socialization for the professional role" has been conceived of as the major theoretical problem, the concentration of data collection has been in the medical school. The relevance of the findings of such research for behavior in the physician's role has been largely a matter of assumption.

Traditionally, the medical school has been closely tied to its parent profession. In taking the Hippocratic oath, still used for the ritual entry into the profession, the new medical school graduate swears "to teach . . . this art . . . by precept, lecture, and every other mode of instruction . . . [to] impart knowledge of the art to [his] . . . own sons and those of . . . [his] teachers, and to disciples . . . according to the laws of medicine." By this symbolic act, the point of formal entry into the profession is rooted in a strong tradition that to practice is also to teach.

On this basis and on others, the assumption that the faculty of the medical school still represents, broadly speaking, the prevailing norms of the medical profession seems justified. Seventy-five years ago this would have been, without question, a valid assumption. For the most part, the faculties of the medical schools literally were the profession. The intervening period, however, has seen far-reaching changes both in the profession and in the medical school. Not only has the medical school become the host for a variety of nonmedical professionals, who have major responsibilities for teaching, research, and patient care, but it has also defined new

professional medical roles, embodied in the full-time faculty physician. Under these conditions, is it feasible to assume that the medical school is the legitimate socializing agent of the profession?

Socialization has been defined by Merton as "the processes by which people selectively acquire the values and attitudes, the interests, skills, and knowledge—in short, the culture—current in the groups of which they are, or seek to become a member."[20k] By this definition, in one sense, the assumption that the medical school represents the culture of the profession appears to have an obvious validity: The medical school is the source of the abstract body of knowledge and the skills on which the profession of medicine is based. The values of the physician, however, are less clearly attributable to the medical school as their source. According to Caplovitz,[3] in one of the few empirical studies which inquire specifically about this question, values are not a major aspect of socialization in the medical school.

Caplovitz conducted his study at "an outstanding medical school in the Eastern United States," seeking to find out "which components of the physician's role are emphasized during medical school." His analysis focused on "the faculty members nominated by students as outstanding role performers—men they are likely to take as role models—and the students judged by the faculty to be particularly promising physicians." His basic finding was "that the acquisition of technical knowledge and skills is given much more emphasis than the acquisition of medical values at this stage in the socialization process. Both students and faculty," Caplovitz concluded, "evaluate each other as professionals on the basis of skills and knowledge and not on the basis of values."

Yet the values of medicine have been at the core of both the major educational experiments and their research counterparts. The comprehensive care programs, for example, were designed to restructure the learning situation for medical students so that the focus of attention on the hospital bed patient might be redistributed to include the ambulatory patient.[41] The ambulatory patient, it was pointed out, required the most attention from doctors in practice, but in medical school, internship, and even in residen-

cies, the hospital bed patient has been central in the educational process. This was not necessarily a charge that the school was out of touch with the realities of medical practice. More usually, it was part of an assertion that the preoccupation of the profession with a narrowly conceived "science of medicine" had been represented in the medical school initially by a heavy emphasis on basic science, and had been followed by an equal emphasis on clinical "science." The choice of the hospital bed patient as the most important subject for clinical learning was attributed to the greater convenience for scientific study and observation.

Clearly, the main concern of medical educators, as the historical review earlier in this paper tried to show, was with the sentiments of medical students toward their future patients. Was the emphasis on experimental, laboratory, and clinical science, in spite of their admitted contribution to the greatly increased effectiveness of the profession during the first half of this century, now functioning to obscure the traditional responsibility of medicine for the welfare of the patient as a whole human being? Perhaps the richest source of speculation on this and other questions about the relationship between the medical school and the profession is in the work of Osler Peterson and his associates.[114]

Peterson directed a novel study of general practice in North Carolina. With a team composed mainly of internists, he sought to describe and evaluate the actual behavior of a sample of general practitioners in a variety of types of rural and urban settings. The subjects of the investigation were the doctors themselves, observed as they conducted their practices in office, home, and hospital.

For the purposes of this discussion, the most noteworthy aspect of the study was the analysis of the previous medical education of the subjects in association with the data on their conduct in medical practice. Typically, the conclusions of the study on these questions were carefully and modestly drawn, underscoring the complexity of the problem and the limitations of the data. Nevertheless, the findings are very striking.

For example, a relationship was found between the level of performance as reported by the medical schools and the level of

performance in practice. Moreover, skills and knowledge were found to be associated directly with concern for the patient and sensitivity to the social and emotional aspects of illness. However, these relationships tended to be "slight but significant," and there was a wide range of performance within each category. Some physicians whose medical school performance had been rated at the highest level performed at the lowest level in practice, and each student category was distributed throughout the range of evaluation levels of practice.

Perhaps most striking, however, was the diminution of relationship between school and practice with increasing age. The physicians in the sample aged 28–35 showed the most significant relationship with medical school performance. After the age of 35, the relationship essentially disappeared. Moreover, those physicians with the weakest performance in medical school seemed to show steadily increasing average performance with years in practice; the reverse was true for the better students. It was as though the situation—or culture—of the practicing profession took over the major influence on the practitioner, functioning to equalize the total group and reduce their earlier differences.

Since 1956, when the Peterson study was published, no similar studies have been done in the United States, in spite of enthusiastic recommendations that further research of this type be carried out.[106] In the meantime, however, an increase of interest in the direct study of the postgraduation experience of the medical student, with specific reference to the school experience which precedes it, has become manifest. In 1962, for example, the Association of American Medical Colleges conducted its annual teaching institute on the topic of the relationships between medical educators and medical practitioners. The Bureau of Applied Social Research was engaged to do a survey, and Dr. Patricia L. Kendall directed a study of eight communities in which medical schools are located. Prior to this, research on the internship and residency experience of subjects previously studied in medical school had been initiated by the same group of Columbia University sociologists whose work

is so prominent in the discussion above.[15, 17, 21, 22, 24] The Chicago group, in the meantime, has initiated similar studies of interns.

Thus a trend in research is indicated which seeks direct evidence concerning issues which were sharpened in the study of the student cultures of the medical schools. Is the medical school a separate institution, the setting mainly for its own distinctive culture and experience? Or is the medical school the direct representative of the medical profession, a socializing agency with a major function in preparing the total physician in attitudes and values as well as in the skills and knowledge necessary for his professional role?

SOME FINAL OBSERVATIONS

In the opinion of this reviewer, fifteen years of very active inquiry into the sociology of medical education have accomplished two major objectives: First, they have provided a considerable amount of descriptive information about the medical school. While documenting the details of the social structure of a major social institution, a second objective has been served, namely, the clarification of important theoretical issues about how the medical school functions in society. In the process, this realtively new field has been joined with analogous areas of sociological research, and questions for future inquiry have been thoroughly sifted.

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