

beds are more important to the doctors than to the students in the university centres.

In the final analysis, of course, the teaching, the learning, and the practice of psychological medicine all come down to a matter of *time*. The practice of medicine can move only in one of two directions—it must become more psychological or it will become a technology. The value of medicine to the community and the status of medicine as a profession both depend on its becoming psychological medicine: but this is much slower to practise than was the organic medicine of thirty years ago, and this simple fact has yet to be reflected in either medical education or the arrangements for medical care. At the moment the timing of medicine is geared to the quick precise diagnosis and treatment of organic disease—yet this is not really the major challenge which medicine in this country has to face.

I think it is true also that in regard to status within the profession we have developed wrong values. The central, main, or father figure is at present the specialist—served by more general auxiliaries. I believe that we desperately need to establish as our father figures generalists who can keep a sense of perspective and reduce vastly complicated issues to their basic essentials. Such men will never be numerous, they may be general from the start or they may be made into “generals” after specialist experience, but

inevitably their formation will be greatly dependent upon psychology and psychiatry.

### Summary

The preparation of all doctors needs to be improved so far as psychology and psychiatry are concerned.

What has to be learned includes an attitude of mind, knowledge, and skills. The first is particularly important and is as dependent on all other teachers as it is on psychiatrists. The knowledge is diffuse, largely empirical, and not broken down into described syndromes which can be easily memorized. It is more difficult to acquire than data about organic disease, and the comparison may lead to loss of student interest. The skills are not essentially different from those in general use in medicine, but the younger student is seldom able to acquire them by participation.

“Exposure” to these subjects should not be limited to the undergraduate period of medical education but should be spread through the graduate and postgraduate stages also. What is presented in each stage should be that which the student can assimilate by virtue of his previous knowledge and experience, and must be appropriate to his aims, incentives, and maturity at each stage.

## INTEREST OF GRADUATING MEDICAL STUDENTS IN SOCIAL AND EMOTIONAL ASPECTS OF ILLNESS\*

BY

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### Contribution of Psychiatric Teaching to Medical Training

Concern is felt, both in Britain and in the U.S., that doctors are being trained who are poorly equipped clinically to deal with psychological aspects of illness (College of General Practitioners, 1958; Hill, 1960; Schumacher and Gee, (1961), and who show little interest in social and emotional factors in illness (Martin, 1957). An apparent decline takes place in students' “humanism” as medical training progresses (Merton, Bloom, and Rogoff, 1956); an initial learning “in order to know” gives way to a narrower aim to satisfy the professional examiners (Becker, Hughes, Geer, and Strauss, 1961).

Psychiatrists have been concerned in numerous educational experiments to foster a “comprehensive” medical orientation in students (Ham, 1959; Hammond and Kern, 1959). However, psychiatrists and psychiatry have not been unequivocally acceptable to medical students. Students rarely choose psychiatrists as career role models (Caplovitz, 1960). They tend to rank psychiatry low among the branches of medicine (and their teachers do likewise): in a study of 15 representative U.S. medical schools (Reader, 1958) only dermatology was found to rank lower in prestige. In Britain, only 1% of clinical students at one school appeared to be interested in a psychiatric career (Richardson, 1962); a more general estimate, from

2,234 students in five British medical schools (Martin and Boddy 1962), indicates 7% of students entertain a career preference for psychiatry.

The effects of a psychiatric teaching programme on medical students are uncertain unless the students are evaluated to see if the goals specified by their teachers have been achieved. Measuring changes in students is an arduous undertaking, largely because reliable evaluative instruments for measuring change in knowledge, clinical skills, and attitudes are only now being developed (Langsley, 1962). Even in general medicine examinations are disappointingly unreliable (Hubbard, 1960). Major changes in a teaching programme may not result in any measurable improvement in the students taught by the new method (Aldrich and Bernhardt, 1961). Lecturers know impressionistically that different years of students are dissimilar, but there has been little investigation yet of group variables in classes of medical students, which may foster or impede the aims in teaching a course.

Medical educators have complex issues before them when considering what contribution the teaching of psychiatry should make in the training of all doctors, particularly in view of the changing nature of medical practice. The responsibility to determine objectively the effects on students of a psychiatric teaching programme cannot be waived on the score that convenient measuring devices are not yet available. This investigation reports some effects which psychiatric training had on one class of medical students.

\*This inquiry is part of a continuing study of the effects on medical students of a change in the psychiatric teaching programme being sponsored by the Nuffield Foundation.

**Psychiatric Teaching Given.**—Twenty-seven lectures, nine case demonstrations, and nine attendances at the psychiatric out-patient department occur in the fifth year. In the fourth year there is an elective course of 24 hours; 19 of the 112 students did not attend the elective course.

**Method**

Observations were made on this class with a number of measures at three points in time: (a) during the psychiatric course in the fifth year; (b) at the end of the psychiatric course; and (c) at the end of their student career, as they were writing their final medical examination.

**Medical Student Survey of the Association for the Study of Medical Education.**—This class had participated in the survey of students in 25 British medical schools. Their responses provided independent information about the attitudes they expressed (March, 1961) while actually engaged in studying psychiatry—for example, one item inquired whether the student was having difficulty in learning psychiatry.

**Objective Test in Psychiatry.**—In June, 1961, a year previously (in addition to the professional examination in psychiatry), the class had taken a voluntary multiple-choice examination. The scores were an indication of the amount of factual information students obtained from instruction.

**Attitude Questionary.**—An attitude questionnaire form was prepared, consisting of 15 questions with a range of 60 possible responses. After two of the questions, space was provided for spontaneous responses should the preworded responses not express the student's attitude on that issue. Although preoccupied with their final examinations and requested to reflect on a past teaching experience not currently relevant, nearly all students replied: of 117 listed as candidates for the final examination, 112 returned completed forms.

**Final Qualifying Examination in Medicine.**—The results were available shortly after the forms were completed, 93 students graduating as doctors and 19 failing.

The responses of students on these various measures were sorted, and the data obtained were correlated.

**Findings**

In the class of graduating medical students, half the members indicated they were as interested in psychological factors in illness as they were in organic factors. The other half of the class specified they were more interested in organic factors. On the basis of this self-description the students were categorized as either "affective" students or "physical" students (Table I).

TABLE I.—Attitude of Final-year Medical Students to Psychological Factors in Illness

Psychological factors are important in illness, and interest me as much as organic factors	No.
Psychological factors are important in illness, but I'm more interested in organic factors	53 (48%)
Psychological factors are not especially important in illness, but they interest me as much as organic factors	58
Psychological factors are not important in illness and don't interest me as much as organic factors	1
	0
	(52%)

The half of the class expressing interest in psychological factors (affective students) are compared with the half of the class showing a lesser interest (physical students), to study the implications of this difference in attitude for medical education and for patient-management.

**Sex Difference.**—While women students were more often interested in psychological factors, and men more often interested in organic factors in illness (Table II), this was not a conspicuous trend.

TABLE II.—Sex Difference in Interest in Psychological Aspects of Illness

Sex	No.	Affective	Physical
Women	30	56%	44%
Men	82	44%	56%

**Examination Ability**

**General Ability as Medical Students.**—The first question to be answered is whether the better students tend to be less interested in psychological matters. (Medical students, on the whole, are evaluated according to their examination achievements.) The finding in this class is that half the students passing their final examination are affective, and half of the students failing are affective (Table III). Thus in their general medical ability affective and physical students are similar.

TABLE III.—Ability of Affective Students in the Final Examination and the Psychiatric Test

Final Examination	% Affective	Psychiatry Test Scores	% Affective
Passing students	46	Top	56
Failing	47	Middle	48
		Bottom	46

**Acquisition of Factual Psychiatric Knowledge.**—Table III also shows that in an objective test of psychiatric knowledge the affective students are no more likely to obtain high marks than are physical students. Clearly the psychiatric test, like the final examination, is not effective in sorting the two types of student. The evidence is that the two examinations are associated, evaluating similar attributes in students (Table IV). The better a student had performed in his psychiatric test a year previously the more likely is he to graduate. Competence in learning factual psychiatric knowledge is related to general medical competence and is not an indicator of special interest in psychological aspects of illness.

TABLE IV.—Relation of Score in Psychiatric Information Test to Students' Achievement in Final Medical Examination (No. 107)

Psychiatric Information Test	Final Examination		
	Pass	Fail	Chance of Failing
Top	20	2	1 in 11
Middle	54	9	1 " 7
Bottom	16	6	1 " 3
Total	90	17	1 " 6

**Attitudes to the Psychiatry Course**

**Psychiatry Experienced as Difficult to Learn.**—Students who on graduating reveal themselves as affective were not distinguished a year earlier by their finding psychiatry easy to learn. Many students who found psychiatry difficult are, on graduating, affective; many physical students found psychiatry easy to study (Table V). There is a trend that physical students had somewhat more difficulty than affective students. The class demonstrates that it would be an error to predict that students having difficulty in studying psychiatry are going to be organically oriented on graduation.

TABLE V.—Difficulty Students Experienced while Studying Psychiatry

	No.	Affective Students	Physical Students
No difficulty	66	55%	45%
Difficulty	46	40%	60%

**Approval of Psychiatric Teaching.**—The graduating class was asked to rate the value they accorded their training in psychiatry. Their responses were scored as follows: 4 for a rating of excellent, 3 for good, 2 for fair, and 1 for poor.

The mean score of the class was 2.46. Affective students approved more of the teaching, their mean score being 2.9. The mean score of physical students was 2.05. Students who are interested in psychological aspects of illness therefore tend to value their psychiatric teaching more highly than students who are more interested in organic factors. This differing attitude to psychiatric teaching of affective or physical graduating students is also expressed by the qualitative evaluation the student makes of the course (Table VI). The affective student will in retrospect evaluate his psychiatric course as either excellent or fair. The physical student is more likely to look back on the course as good or poor.

TABLE VI.—*Relation of Students' Attitudes to Psychological Factors and Their Rating of Psychiatric Teaching*

Ratings of Psychiatric Teaching	Affective	Physical	Total
Excellent ..	8	5	13
Good ..	33	37	70
Fair ..	11	3	14
Poor ..	1	14	15

**Research Orientation.**—This complex finding is clarified to some extent by the further finding that when asked to express their opinions about the research approach most likely (in their opinion) to advance psychiatric knowledge, half the affective students selected clinical or psychodynamic (child-rearing methods, personality formation) approaches and the other half neurophysiological or biochemical approaches. An affective bias is thus not related to a psychological or patient-centred orientation, as revealed by the value students accord the two research approaches. The physical students were similarly divided (Table VII). The psychiatric course taught to this class of students tended to emphasize the organic aspects of psychological medicine. Students more interested in scientific matters (neurophysiology and biochemistry),

TABLE VII.—*Research Approach Considered Most Promising*

	No.	Affective	Physical
Patient-centred students ..	53	49%	51%
Science-centred ..	47	47%	53%

therefore, could be expected to get more satisfaction than those students whose medical interest is rather in patients as people. This proved to be the case (Table VIII). Affective students who are science-centered approve of the course most of all. Next strong in approval are physical students who are science-centred. Third in rank are affective students who are patient-centred. Least satisfied by this psychiatry course with its organic emphasis were

TABLE VIII.—*Students' Approval of Course, Related to Psychological Attitude and Medical Interest*

Student Category	No.	Mean Score
1. Science-centred affective ..	22	3.17
2. " physical ..	25	2.84
3. Patient-centred affective ..	26	2.69
4. " physical ..	27	2.63

physical students who were patient-centred, therefore likely to be more interested in organic factors than in psychological.

#### Attitudes to Psychiatric Patients

**Interest in Psychiatric Patients.**—Of the graduating students 19% doubted they were interested in psychiatric patients; 8% were definitely not interested. The teaching

had not succeeded in making this quarter of the class receptive to psychiatric patients. These rejecting students significantly often were more interested in organic aspects of illness (Table IX). This finding indicates that, so far as

TABLE IX.—*Interest in Psychiatric Patients*

	Interested in Psychiatric Patients	Not Interested in Psychiatric Patients	Total
Affective students ..	43%	5%	48%
Physical ..	30%	22%	52%
	73%	27%	100%

Chi square is 13.81;  $P < 0.01$ .

medical graduates' readiness to deal with psychiatric patients is concerned, a greater interest in organic factors by a student is of much importance, in that he will be less responsive to psychological aspects of illness in future patients. It is shown below that attributes marking a patient as psychiatric will tend to render that patient less acceptable to physical students.

**Opportunity to Interview Psychiatric Patients.**—Teachers of psychiatry believe that increased interviewing facilities will make students more interested in psychological aspects of illness (Levine and Lederer, 1959), in addition to promoting acquisition of clinical skills. In this class those students who saw psychiatric patients over a time did tend to be more psychologically minded; this association between clinical experience and affective orientation was not statistically significant (Table X).

TABLE X.—*Students' Chance to See Psychiatric Patients Over a Time*

	No.	Affective	Physical
Saw patients ..	29	62%	38%
" some few patients ..	59	41%	59%
" hardly any patients or none ..	24	46%	54%

**Experience of Psychiatric Illness in a Relative or Friend.**—Nearly half the students (46%) had such non-professional experience of psychiatric illness outside the medical school. They were not very greatly influenced by the experience; only somewhat more than half (54%) who had the experience were affective; 42% of the class who did not have experience of psychiatric disorder in private life were affective. It cannot convincingly be argued, therefore, that students who are personally exposed to psychiatric disorder in close associates are more sympathetic about emotional aspects in patients.

**Students' Confidence in their Ability to Diagnose and Treat Psychiatric Patients.**—The two separate issues of diagnosis and treatment evoke similar proportionate responses from the class (Table XI). They appear to be related indices, although they do not classify individual students in the same way. (A student, of course, who responds, for example, positively on the treatment issue will

TABLE XI.—*Confidence of Students to Diagnose and Treat Psychiatric Patients, in Relation to Psychological-mindedness*

	Can Diagnose	Can Treat	Uncertain		Can't Diagnose	Can't Treat
			Can Diagnose	Can Treat		
Affective students	18	15	26	29	9	9
Physical students	12	11	30	29	17	9

not uniformly be confident also about diagnosis.) The class as a collectivity responds similarly about diagnosis and about treatment of psychiatric patients. Whether or not a student is affective or physical bears no relation to his confidence about being able to perform these medical functions.

**Preparedness to Treat Neurotic Patients.**—One-quarter of the class does not wish to treat psychoneurotic patients in their future practices. Another one-quarter are uncertain if they want such patients. Half the class, therefore, are prepared to have psychoneurotic patients in their future practices. Most students who are uncertain if they wish to have neurotic patients are physical. Affective students are more acceptant of neurotic patients. This difference does not reach statistical significance.

**Preparedness to Treat Psychotic Patients.**—On this issue affective students are strongly distinguished from physical students, who are not prepared to treat psychotic patients (Table XII). Individual students gave substance to their responses by inserting spontaneous statements. One wrote: "My feeling is that personally I would not be of much help to these patients." Another stated: "Their unhappiness is too upsetting." A third student indicated, "I feel that being confronted with a schizophrenic is just a bit too much for me to cope with."

TABLE XII.—Acceptance of Psychotic Patients

	Affective	Physical	Total
Will treat psychotic patients .. ..	22	16	38
Uncertain .. ..	14	13	27
Won't treat psychotic patients .. ..	17	30	47

Chi square for difference between treating and not treating psychotic patients = 3.99; P < 0.05.

**Personal Attributes of Students**

**Psychiatric Career Choice.**—The graduating class specified their attitudes to psychiatry as a career. Over half the class are emphatic that they do not want to become psychiatrists. There is a significant relationship between this negative psychiatric-career preference and expression of a physical orientation. The more averse students are to a psychiatric career the stronger their chance of a physical orientation. On the other hand, the more acceptable a student finds a psychiatric career the more likely is he to be affective (Table XIII). Positive psychiatric-career choice may thus be regarded as an indicator of affective students; negative psychiatric-career choice is an indicator of physical students. This association of positive psychiatric-

TABLE XIII.—Relation of Psychiatric-career Choice to Interest in Psychological Factors in Illness

	No.	Affective	Physical
Definitely averse to psychiatric career ..	26	15%	85%
Don't on the whole want a psychiatric career ..	34	26%	74%
Consider a psychiatric career .. ..	36	78%	22%
Seriously consider a psychiatric career ..	10	100%	0%

career choice with interest in psychological aspects of illness is a check on the validity of students' statements of their subjective attitudes. Had this good fit not been obtained, doubt would arise that the class had categorized itself validly on the psychological-organic attitude dimension.

Each student had stated his position on the following personal issues over a year previously, while the psychiatric course was in progress.

1. *Doubts about medicine* being the right career for them had worried half the affective and half the physical students when they were in their fifth year.

2. *Examination anxiety* proved an attribute which also failed to distinguish the two categories of students. Confirmation is thus not obtained from this class of a previous finding (Eron, 1955) that students interested in specializing in psychiatry tend to be more anxious than students with other career choices.

3. *Difficulty in managing relationships with patients* on the general wards did not discriminate between the two categories.

4. *Gratitude of patients* as an important component of the satisfaction expected from future medical practice was endorsed by half the class, regardless of whether they were affective or physical.

5. *Community standing* is also important to half the class, and such desire for social status does not distinguish psychologically minded students from students with more organic interests.

6. *Research opportunity* in later medical practice is of greater importance, but not to a significant degree, to affective than to physical students.

7. *A good income*, if an important career consideration, is equally desired by affective and by physical students (Table XIV). However, among students who do not aim

TABLE XIV.—Importance Attached to Income

	Affective Students	Physical Students
Good income important .. ..	13	12
Good income fairly important .. ..	20	35
Good income not important .. ..	19	11

Chi square is 5.69; P < 0.02, for difference between "fairly important" and "not important."

for a good income, financial considerations distinguish psychologically minded from students with more marked organic interests. Physical students significantly more often attach importance to income.

**Conclusions**

Of a graduating class of medical students one-half said they were as interested in psychological as in organic factors in illness (affective), while the other half were more interested in organic factors (physical).

1. Affective students were distinguished by the fact that they had considered a psychiatric career, by an interest in psychiatric patients, and by a preparedness to have psychotic patients in their future practice. Unless a good income was important to them they were characterized by caring less about making money. These indicators were statistically significant. Factors relating less strongly to an affective orientation are: preparedness to treat neurotic patients in future practice; experience during psychiatric training of personally interviewing psychiatric patients; and the wish for some research opportunity in future medical work.

2. Physical students, on the other hand, could be distinguished by negative psychiatric career choice; refusal to treat psychotics in later medical practice; and lack of interest in psychiatric patients; physical students want a fairly good income. These indicators sorted physical students to a statistically significant degree. Less strong indicators of a physical orientation are: resistance to becoming more interested in psychiatry after the course was taught; disinclination to treat neurotic patients in later practice; and a tendency to find psychiatry difficult while engaged in learning it.

3. That an affective or a physical orientation, while complex, determines only certain clinical attitudes is suggested by the finding that either type of student is equally likely to be science-centred on the one hand or patient-centred on the other. The course of psychiatric teaching given this class was found satisfactory by science-centred students (both affective and physical), but was found less

satisfactory by patient-centred students. Medical students, therefore, in addition to being psychological or organic in orientation, also differ in a dimension which seems a separate one—whether they are primarily interested in people or more concerned about, for example, neurophysiology and biochemical matters; and the two dimensions together measure whether a student approves of the course or not. The course provided was liked by psychologically oriented students who have a scientific bias. But the course is not liked so much by students who care primarily about patients, whether they are psychologically or organically oriented.

4. There are factors which do not indicate at all whether students are affective or physical. In general, these are attributes which are linked with technical learning, are not dependent on individual personal choices of students, but are taught to all students as an aspect of medical role-definition during professional training. These factors, which seem an aspect of doctoring in general and not affected by organic orientation on the one hand, or psychological orientation on the other, are: general medical ability (that is, capacity to graduate in medicine); ability to acquire factual psychiatric information; the student's confidence in his ability to diagnose and treat psychiatric disorders; extent of examination anxiety; uncertainty about having chosen medicine as a career; having difficulty in relationships with patients; and desire in later practice to obtain gratitude of patients or a good standing in the community. These attributes were found to be unrelated to psychological orientation.

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## EXAMINATION PERFORMANCE OF MEDICAL AND NON-MEDICAL STUDENTS AT CAMBRIDGE

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Many opinions have been expressed both by headmasters and by deans of medical schools concerning the academic standards of entrants to the medical profession (B.M.A., 1962). For the most part these opinions are based on subjective experience and not infrequently suggest that the number of able people entering the profession is declining (B.M.J., 1962). The present survey was therefore undertaken to see whether there is any support for the view that the performance of medical students in certain university examinations at Cambridge is less satisfactory than that of a group of non-medical students.

The system of university examinations at Cambridge is complicated, and any generalization about it is apt to be misleading in many special cases. Bearing in mind these reservations, however, certain generalizations can be made.

At the end of their first year at the university students of the Natural Sciences (including medical students) sit for the Preliminary Examination for Part I of the Natural Sciences Tripos. Some students then proceed to the examination for Part I of the Tripos at the end of the second year, while others take this examination at the end of their third year. The majority of non-medical students sit for the Part I Examination after two years spent at the university, and the majority of medical students sit for that examination after three years.

The Natural Sciences Tripos may be taken in different combinations of subjects. Medical students are required to read anatomy and physiology as "whole" subjects

together with at least two "half" subjects, frequently pathology and biochemistry. Non-medical students, of course, take other combinations of subjects. Placing in the class lists—that is, class I, II 1, II 2, III, or failed the examination—for Part I of the Tripos is determined by the overall performance in the various subjects taken by the candidate.

There is a suggestion (Horn, 1963) that medical students are awarded fewer first-class honours in the examination for Part I of the Natural Sciences Tripos than students who read other combinations of subjects. This may happen because students who come up intending to read medicine have fewer of the more able individuals among them than non-medical students. Another explanation for this difference, however, is that it may be easier to obtain high marks in subjects which tend not to be read by medical students—for example, physics, chemistry, mathematics. An explanation of this kind could account for the trend toward a higher proportion of firsts among non-medical natural scientists. It was therefore considered that if the performance of medical students could be compared with that of non-medical students in the same examination this particular variable would be taken into account.

### Material

The performance of the two groups in two sets of examinations was analysed. One of the examinations was the Preliminary Examination in Physiology, which is taken