THE CLINICAL EXPERIENCE: AN ETHNOGRAPHY OF MEDICAL EDUCATION
VOLUME TWO

Paul Anthony Atkinson

Ph.D.
University of Edinburgh
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References


Christison, Sir Robert, Life of (1885). Edited by his sons. 

Edinburgh.


Duncan, A.S. (n.d.). The Undergraduate Medical Curriculum. Unpublished paper, Faculty of Medicine, University of Edinburgh.


Hall, O. (1948). The Stages of a Medical Career. American Journal of Sociology, 53


Appendix 1: Letters of introduction

Here are appended copies of letters circulated to members of the clinical teaching staff on my behalf. They constituted my official entree to the various clinical units described in the thesis.
To: Members of Staff responsible for Fourth Year Cliniques in Autumn Term 1971/72.

Dear,

This letter is to introduce Mr. Paul Atkinson a Ph.D. student in the Department of Educational Sciences. Mr. Atkinson's first degree was in Social Anthropology at Cambridge and he is now studying attitudes of medical students to their training.

The Faculty of Medicine has agreed (Minute 106 of 2nd February, 1971) that Mr. Atkinson might, at the discretion of those responsible, observe the teaching of medical students in the clinical years "by unobtrusive association with sizeable groups of students. This precluded any study in Final Phase".

Mr. Atkinson would like to observe during the Autumn Term 1971, the introduction of students to clinical teaching.

It will of course not be possible for him during the one term to observe all the cliniques but he would like to be present with a number of them on a varying number of occasions. In the event of Mr. Atkinson approaching you for permission to be present during the teaching of the clinique attached to your charge, the Faculty would be grateful for any help that you can give him. In respect of his studies within the Faculty of Medicine he will be responsible to me as Professor of Medical Education and any queries or comments about Mr. Atkinson's work or its effects should be addressed to me.

With thanks for any help that you may be able to give.

Yours sincerely,

[Signature]

Executive Dean

and

Professor of Medical Education
To: Members of Staff responsible for Fourth Year Cliniques in Autumn Term 1971/72

Dear

I write further to my circular of 4th October on the subject of Mr. Atkinson's proposed research.

I must apologise that I had not consulted Professor Donald in advance about this study. As Professor of Medicine he has, as you know, the responsibility of organization of Clinical Medicine Teaching throughout the University.

In addition, the Faculty minute to which I referred recorded Faculty's approval for the work "at the discretion of Heads of Departments".

Professor Donald has now seen Mr. Atkinson and is satisfied that the study should be supported. I have, in addition, got the approval of Professor Girdwood and of Dr. John Macleod (recently elected Chairman of the Department of Medicine, W.G.H.).

The suggestion has been put to me that the permission of the Boards of Management should have been obtained. I have made soundings on this matter and I am persuaded that it is not advisable to consult the Boards. The Boards have confidence in the judgment of the consultant clinicians in matters of this kind. The need for complete confidentiality has been fully accepted by Mr. Atkinson. If a consultant feels that on any particular occasion it is not proper for Mr. Atkinson to be present, the consultant has, of course, the full right to exclude him.

I feel sure that in spite of possible difficulties, useful information can come out of this study at a time when there is so much discussion about selection, motivation and career choice in medicine.

Yours sincerely,

[Signature]

Executive Dean
and
Professor of Medical Education
Appendix 2: The questionnaire

This appendix contains a copy of the self-administered questionnaire that was distributed to the fourth-year students. It was given to the first cohort of students studied, towards the end of the third (summer) term of the study. It was completed and returned by 112 students. I am grateful to the members of staff who allowed me to encroach upon their lecture times in order to give it out, and to the students who acted as unofficial research assistants, in collecting completed schedules from some of their recalcitrant friends and flat-mates.
FOURTH YEAR MEDICAL STUDENTS QUESTIONNAIRE

As most of you will know, over the past year I have been investigating the clinical teaching offered to fourth year students here in Edinburgh. Now that you have completed your first year of clinical work, I should be very grateful if you would complete and return this questionnaire. Although it may look rather long, it should not take very long to answer - as you will see, it consists mainly of multiple-choice questions.

I know that you are kept very busy at this time of the year, but a high response rate to this survey will be very helpful for me in my research, as well as of potential use to future medical students in Edinburgh.

The questionnaires are entirely anonymous, and as with all the other information gathered this year, they will remain completely confidential: no individuals will be identified in any published results.

Please feel free to add your own comments beside questions or on the backs of the pages; similarly, please spread on to the back if you run out of space in answering any of the more general questions.

I shall do my best to have the results of this survey available for you at the beginning of the next session. Good luck with your clerkships this summer and thank you for your help.

Paul Atkinson.

Centre for Research in the Educational Sciences,
24 Buccleuch Place,
Edinburgh.
1. Sex ... M ... 1  2. Year of entry: 1st with no exemptions ... 1
   F ... 2  1st with exemptions ... 2
   2nd direct entry ... 3

3. During your preclinical course, did you pass your examinations in
   the following subjects at the first attempt, or at a re-sit?
   Please ring the appropriate no. for each subject:

<table>
<thead>
<tr>
<th>Subject</th>
<th>First attempt</th>
<th>Re-sit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Physiology</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pathology</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

4. Have you decided on the nature of your final career in medicine?
   Please ring the appropriate number:

   Yes, definitely ... 1
   I have inclinations toward a certain field, but have not finally decided ... 2
   No, but I have firmly decided against some kinds of work ... 3
   No, I am quite undecided ... 4

5. Whether or not you have made up your mind, which would be your
   first preference at present, from among the following areas of
   specialisation? Please ring the number of your preference:

   Pathology ... 1  Psychiatry ... 6
   Surgery ... 2  General Practice ... 7
   Medicine in hospital ... 3  Medical Research ... 8
   Obstetrics/Gynaecology ... 4  Public Health/Social Med ... 9
   Paediatrics ... 5  Other (please specify) ...

6. In which specialty would you least like to pursue a career?

7. As far as you can remember, what was your career intention
   when you first came to medical school?

8. Since you came to University, what have been your main leisure
   activities? (e.g. sports, societies, etc.) Please list them briefly here:
9. **HONOURS:** Have you done an honours year? Yes ... 1 No ... 2

10. If you ticked No was this because:
   - You would have liked to do so, but were not offered one ... 1
   - You were offered one, but did not wish to do one. ... 2
   - You neither wanted one nor were offered one ... 3

11. A. For those who did complete an honours year, or who wished to complete one. Which subject was that in? 

B. For those who did not wish to complete an honours year: 

Please indicate the importance of the following considerations in your wish for an honours course by ringing one number on the seven-point scale for each of the statements given below:

a. A wish to deepen your knowledge of one particular subject:
   very important 1 2 3 4 5 6 7 of no importance

b. A wish to pursue a career in that subject:
   very important 1 2 3 4 5 6 7 of no importance

c. A lack of confidence about entering clinical work:
   very important 1 2 3 4 5 6 7 of no importance

d. A desire to gain some experience of scientific research
   very important 1 2 3 4 5 6 7 of no importance

e. An honours degree enhances one's career prospects generally:
   very important 1 2 3 4 5 6 7 of no importance

f. The usefulness of your honours subject for your final career:
   very important 1 2 3 4 5 6 7 of no importance

Please indicate the importance of the following considerations in your attitude towards Honours, by circling one of the numbers on the seven-point scale for each of the statements below:

a. A wish to keep your undergraduate course as short as possible:
   very important 1 2 3 4 5 6 7 of no importance

b. Lack of sufficient interest in any of the subjects:
   very important 1 2 3 4 5 6 7 of no importance

c. A desire to get on with clinical medicine:
   very important 1 2 3 4 5 6 7 of no importance

d. Irrelevance of honours subjects to your eventual career:
   very important 1 2 3 4 5 6 7 of no importance

e. Dislike of the purely academic nature of preclinical subjects:
   very important 1 2 3 4 5 6 7 of no importance

12. a. As a clinical student, which of the following statements best describes the position you felt yourself to be in on your MEDICAL attachments? Please ring the appropriate category:
   - An ordinary university undergraduate ... 1
   - An apprentice in a medical team. ... 2
   - A passive observer of medical practice ... 3
b. Similarly, which statement best describes your position on your SURGICAL attachment?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>An ordinary university student</td>
<td>1</td>
</tr>
<tr>
<td>An apprentice in a surgical team</td>
<td>2</td>
</tr>
<tr>
<td>A passive observer of surgical practice</td>
<td>3</td>
</tr>
</tbody>
</table>

13. On the whole do you find that patients regard you as:

<table>
<thead>
<tr>
<th>Position</th>
<th>On Medical units</th>
<th>On Surgical units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A junior doctor</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>A nurse or orderly</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>A student</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>They don't know what to make of you</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

14. Have you experienced any difficulty in establishing effective relationships with patients over the year? Please ring one category each for medicine and surgery:

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>On Medical Units</th>
<th>On Surgical unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerable difficulty</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Moderate difficulty</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Slight difficulty</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>No difficulty at all</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

15. Which was your FIRST clinique this year? Was this a first choice?

16. Which was your SECOND clinique this year? Was this a first choice?

17. Which was your THIRD clinique this year? Was this a first choice?

18. In coming to a decision about your choice of cliniques this year please indicate the importance of the following. 0 = of no importance; 1 of slight importance; 2 = fairly important; 3 = very important. Please ring one number for each statement.

- The recommendations of students in 5th year and Final Phase
  - 0 1 2 3
- The recommendations of students in your own year
  - 0 1 2 3
- The advice of members of staff
  - 0 1 2 3
- Random choice
  - 0 1 2 3
19. Here are a number of factors that might influence a choice of cliniques. Please indicate their importance to you in stating your preferences this year, by circling the appropriate number for each statement.

0 = of no importance; 1 = of slight importance; 2 = fairly important; 3 = very important.

a. The specialist interests of units .......... 0 1 2 3
b. The hospitals the units were in .......... 0 1 2 3
c. Possible units for Pre-registration Year jobs .......... 0 1 2 3
d. What you knew of the teaching arrangements of the units .......... 0 1 2 3
e. Choosing general rather than specialised units .......... 0 1 2 3
f. What you had heard of the personal characteristics of the clinicians .......... 0 1 2 3
g. A desire to keep back some good units for Final Phase attachments .......... 0 1 2 3

What other considerations prompted your choice of cliniques this year? (Please answer, whether or not you were successful in being attached to the cliniques of your choice.)

20. Below is a list of problems which doctors and medical students sometimes meet. To what extent have you yourself thought about these problems? Please indicate your reply by circling one number for each statement. 0 = 'I have not thought about it at all'; 1 = 'I have thought about it a little'; 2 = 'I have thought about it a fair amount'; 3 = 'I have thought about it a great deal'.

a. The need to understand the social background to illness .......... 0 1 2 3
b. The need to impress consultants in getting hospital jobs .......... 0 1 2 3
c. The difficulty of maintaining the proper degree of detachment from patients .......... 0 1 2 3
d. The 'rat race' of a career in hospital medicine .......... 0 1 2 3
e. The need to understand the psychological background to illness .......... 0 1 2 3
f. The uncertainties of diagnosis and therapy that one meets in practice .......... 0 1 2 3
g. The competition for house jobs in the Edinburgh region .......... 0 1 2 3
h. The possibility of becoming too involved with one patient .......... 0 1 2 3
i. The pay and conditions of work of junior hospital doctors .......... 0 1 2 3
j. The problem of keeping abreast of scientific advances in medicine .......... 0 1 2 3
k. The difficulties of reconciling a satisfying home life with a successful career in medicine .......... 0 1 2 3
21. Have you any doubts about your choice of medicine as a career? Please ring the appropriate category:

Yes, serious doubt. 1  If so, what have been the main causes of your doubts? Please specify briefly:
Yes, slight doubt. 2
No, no doubt. 3

BELOW ARE SOME QUESTIONS SPECIFICALLY ABOUT THE CLINIQUE YOU ARE ON THIS TERM

22. Is this clinique in: MEDICINE 1 or SURGERY 2

23. On your present attachment, have there been provisions made for visits to special clinics, other units (e.g. coronary care, renal units etc.) or to other hospitals? If so, please describe the arrangements briefly:

24. Did you find such visits useful? Please describe your reactions to them briefly:

25. a. Were such visits made:  
Frequently 1  
Occasionally 2  
Rarely 3  
Never 4  

b. Do you think this was:  
Too often 1  
Not often enough 2  
About right 3  

26. a. Have you had opportunities to visit Out-Patient Departments this term?  
Yes, every week at least 1  
Yes, from time to time 2  
Yes, rarely 3  
No, never 4  

b. Do you think this was:  
Too often 1  
Not often enough 2  
About right 3  

27. Are there opportunities for you to attend on waiting nights, or similar periods other than the morning teaching sessions?  
Yes 1  No 2  If so, please describe the arrangements briefly:

28. What, if any, is the usefulness of attending on waiting nights etc.?
29. Are there regular opportunities for you to attend ward meetings/clinical conferences?

30. Are there regular opportunities for you to discuss your work with any of your teachers on your present attachment? Please specify briefly:

31. On your present attachment, do you find the academic standards:
   - Much too high ... 1
   - A bit too high ... 2
   - A bit too low ... 3
   - Much too low ... 4
   - About right ... 5

32. On your present attachment, do you think that any of the consultant staff have got to know you personally?

33. On your present attachment, do you think that any of the registrars and housemen have got to know you personally?

34. Do you think that any of the consultants have developed a close knowledge of your work and abilities?

35. Do you think that any of the registrars and housemen have developed a close knowledge of your work and abilities?

36. On the whole, which of the following statements most accurately reflects your ideas about the approach to teaching fourth year students on your present attachment?
   - None of the staff seems very interested in teaching us ... 1
   - A few of the staff seem interested in teaching us ... 2
   - Most of the staff seem interested in teaching us ... 3
   - All of the staff seem interested in teaching us ... 4

37. Is your present clinique ever split up for teaching in smaller groups?
   - Every day ... 1
   - Occasionally ... 2
   - Once a week or less ... 3
   - Never ... 4
38. On your present attachment, are you taught by Consultants?
   Every day . . . 1 Occasionally . . . 2
   Once a week or less . . . 3

39. Are there regular tutorials/lectures on specific topics arranged
    for your clinique? (e.g. on Therapeutics, Post-operative care etc.)
    Please describe the arrangements briefly — e.g. how often are
    they, what do they cover, do you find them helpful etc.

40. Are these: Too often . . . 1 Not often enough . . . 2 About right . .

41. In your opinion, is the time spent on ward-work and bedside
    teaching on your present attachment:
    Much too little time. . . . 1 A bit too much . . . . 3
    A bit too little. . . . . . . 2 Much too much. . . . 4
    About right . . . . . . . . . 5

42. In your opinion, is the amount of time spent in tutorials and
    lectures in the teaching room:
    Much too little time. . . . 1 A bit too much . . . . 3
    A bit too little. . . . . . . 2 Much too much. . . . 4
    About right . . . . . . . . . 5

43. On the whole, do you think that staff of your present attachment
    are interested primarily in:
    Research and scientifically-oriented medicine . . . . . 1
    Practice and patient-oriented medicine. . . . . . . . 2
    Equally interested in both. . . . . . . . . . . . . . . . . . . 3

44. Some attachments are more specialised than others in the range
    of pathology seen and the interests of the clinicians. On the
    whole, would you describe your present attachment as:
    Very specialised . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
    Fairly specialised, with some general pathology. . . . . 2
    Fairly general, with some specialist interests . . . . 3
    Very general . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4

45. If there are specialist interests, please list them briefly:
46. Do you find that the staff members tend to teach on their own specialist interests?

47. Do the staff teach their own interests:
   Too much . . . 1   Too little . . . 2   About right . . . 3

48. What are your opinions of the doctor-patient relationships that you have observed on your present attachment?

49. Obviously a questionnaire of this sort cannot cover everything. The space below is therefore left blank for you to add your own comments about your experiences this year - the teaching you have received and the units you have been attached to. Your comments on the questionnaire itself will also be very welcome.

50. One last question. Have you ever had a vacation job in a hospital (e.g. nursing assistant, porter etc.) If so, please describe it here. Do you think that this experience has been useful to you in any way in your clinical work - in establishing effective relationships with clinicians and patients, for instance?

THANK YOU VERY MUCH FOR YOUR HELP.
Appendix 3: Girls in White

Feminists might justifiably take issue with the authors of Boys in White, for despite the title of that book, there were women among the students at Kansas University medical school. The authors mention just once the existence of such 'girls in white', pointing out that 'each class contains a number of women, ordinarily around five' (Becker et al., 1961, p.60). They comment that this small proportion of female students did not reflect discrimination on the part of the school administration, as few women applied for admission in the first place. From that point on, the women students receive no specific mention; there is no discussion of possible sex differences in students' perspectives on their training or future careers. The authors were explicitly concerned with the 'sphere of collective action', as they make clear in replying to Levison's criticism for their lack of interest in personality differences between students (Levison, 1967; Becker and Geer, 1967). Nevertheless, their failure to consider the few women at Kansas seems an unnecessary omission.

Kansas University, at the time of that study, was by no means atypical of American medical schools in its intake of women. The American medical profession has resisted the 'feminization' of the field (cf. Walton, 1972), and the proportion of women in the freshman year of all American medical schools topped ten per cent for the first time in 1967/68 (Jarecky et al., 1968). In Britain, the picture is rather different, and a study of medical education in this country and at this time could hardly disregard the high proportion of
women in British medical schools, where, at the time of the research, they comprised roughly one quarter of the student body—a proportion that was rising (cf. Jefferys et al., 1965; Royal Commission on Medical Education, 1968).

The place of women in medical schools and the medical profession has been commented on by a number of authors, but most of the available work has concentrated on a limited range of concerns, all generally related to the problem of 'woman-power'. At the undergraduate level, most studies concentrate primarily on the topics of selection, ability and attainment (e.g., Perry, 1966; Johnson, 1971). It has been established that in the past female students have encountered greater difficulty in gaining a place in medical school, and have, on average, been better qualified than their male counterparts. Within the medical school, female students have been found to perform slightly, but consistently, better than male students (see Jefferys et al., 1965; Perry, 1966; Royal Commission on Medical Education, 1968; Stanley and Last, 1969). Sex differences in students' everyday experiences and perspectives have not frequently been a topic of investigation—an exception being Walton's (1968) study of Edinburgh students in their fifth year. The main text of this thesis has not addressed this topic, and it would not have been feasible to present a systematic comparison between male and female students throughout the ethnography. Here however I attempt to provide some data relating to sex differences in outlook among the fourth-year students at Edinburgh, based primarily on the results of the self-administered questionnaire.
Future Careers

The fourth-year students were asked a number of questions that related to career plans and specialty choice. They were asked to indicate the firmness of their preferences or intentions concerning practice in a particular field of medicine. The item asked, 'Have you decided on the nature of your final career in medicine?'. There were four categories of response: 'Yes, definitely'; 'I have inclinations toward a certain field, but havenot finally decided'; No, but I have firmly decided against some kinds of work'; 'No, I am quite undecided'. The students' responses to this item are detailed in Table 1.

Table 1: Firmness of students' career choices

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Definite'</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>'Not quite definite'</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td>'Negative feelings only'</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>'Quite undecided'</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>28</td>
</tr>
</tbody>
</table>

Although a slightly smaller proportion of the women had come to a 'definite' aspiration concerning their future work, there was no consistent sex difference among the students on this item. Male and female students were quite clearly distinguished, however, when it came to their preferences for specialties within medicine as possible career choices. Irrespective of whether they had made up their minds,
the students were asked to indicate which if a given list of specialties would be their first choice for a career (the students were invited to write in any additional specialty that was not specified). The list of specialty titles was not intended to be exhaustive, but was designed to cover the most commonly opted-for specialties, with the addition of several less popular ones. The list of specialties and the students' stated preferences among them are detailed in Table 2.

Table 2: Most favourably perceived specialties

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Medicine</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Obstetrics/Gynaecology</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>General Practice</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Pathology</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medical Research</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Public Health</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Other/no response</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>84</td>
<td>27</td>
</tr>
</tbody>
</table>

Before consideration of these figures, the results of a closely related item will also be presented. The students were also asked to indicate in which specialty they would least like to pursue a career. The results of this aspect of career preference are presented in Table 3.
Table 3: Least favourably perceived specialties

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Medicine</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Obstetrics/Gynaecology</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>General Practice</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Pathology</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Medical Research</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Public Health</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Other/no response</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>84</td>
<td>28</td>
</tr>
</tbody>
</table>

The most striking thing to emerge from the fourth-year students' career preferences and their least favoured specialties is the sharp difference between the sexes in their attitudes towards surgery as a possible future career. As one might reasonably expect from the students' perceptions of the two subjects, there is a considerable difference between medicine and surgery in the students' preferences. Students of both sexes more frequently specified medicine as their preferred career specialty, and no student of either sex listed it as their least desirable career choice. The distinction between the two specialties was, however, accentuated by a difference between the male and female students. None of the 'girls in white' gave surgery as their first choice, and over two-fifths of them gave it as their least favourably perceived specialty.
In terms of an absence of hostility, there is clearly something of a halo of esteem surrounding the three specialties of Obstetrics/Gynaecology, Paediatrics and Medicine for both the sexes, but considerably more women opted for Paediatrics as their first choice. There was little difference between the sexes in the proportion who preferred General Practice as a career.

The findings are not readily comparable to many of the available published studies, insofar as most of them refer only to first-year and final-year students (e.g., The Royal Commission on Medical Education, 1968). Where intermediate year groups are considered (e.g., Martin and Boddy, 1962) sex differences are not investigated. Although Martin and Boddy note the relative unpopularity of surgery in the first clinical year, their failure to consider sex differences makes it impossible to compare their findings with the marked difference in attitude towards surgery between the male and female students in the fourth year at Edinburgh.

Surgery - a man's world?

Career preferences stated in the fourth year will not necessarily predict final career outcomes, nor even students' preferences in their final year. Nevertheless, such preferences and perceptions may be taken to indicate general orientations vis-à-vis the world of medicine. In terms of stereotypes of medical specialists, in both lay and medical student opinion, the surgeon is consistently seen as pre-eminently masculine, and surgery as a 'man's world', in contrast to medicine, which enjoys a more 'feminised' image (Atkinson, 1971). Given this difference in the sex-typing of the two specialties, and the students' stated career preferences one might expect to find
sex differences in the students' perceptions of their experiences in the two specialties. Here are presented some of the data relating to such sex differences.

There was no difference between male and female students in their self-perceptions in medicine and surgery, as 'apprentices', 'students' or 'passive observers'. There was, however, a difference in the students' beliefs concerning their views on patients' perceptions of themselves. In both specialties the men more frequently believed that they had been seen as 'junior doctors', whilst the women more frequently reported thinking that they had been seen as 'students'. This underlying sex difference was amplified by a difference between the two specialties - women even more rarely reporting having been seen as 'junior doctors' in surgery than they did in medicine. I had expected that a larger proportion of the female students would report that they had been seen as nurses, but in fact this was not the case - which perhaps emphasises how great the divide between the medical students and the paramedical staff is on the wards. The students' responses are detailed in Table 4.

**Table 4: Students' beliefs concerning patients' perceptions of them**

<table>
<thead>
<tr>
<th></th>
<th>Medical units</th>
<th></th>
<th>Surgical units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>'Junior doctor'</td>
<td>60</td>
<td>71%</td>
<td>39</td>
<td>47%</td>
</tr>
<tr>
<td>'Student'</td>
<td>18</td>
<td>21%</td>
<td>35</td>
<td>42%</td>
</tr>
<tr>
<td>'Nurse/orferly'</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>'They don't know what to make of you'</td>
<td>5</td>
<td>6%</td>
<td>7</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>28</td>
<td>83</td>
<td>28</td>
</tr>
</tbody>
</table>
There was little difference between the sexes in reports of difficulty in forming relationships with patients in medicine; there was, however, a considerable difference between the men and women in this regard in surgery. Both sexes reported greater difficulties in surgery, but the women appeared to have been more greatly affected by the difference in context then their male counterparts (Table 5).

Table 5: Students reporting difficulty in forming relationships with patients

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>On medical units</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>On surgical units</td>
<td>44</td>
<td>21</td>
</tr>
</tbody>
</table>

Students were also asked to evaluate their relationships with their clinical teachers. If the relevant figures for medicine and surgery are examined for sex differences, then the figures involved become very small indeed. They are, however, consistent with the view of surgery as a 'man's world'. For both grades of staff, the men more frequently reported a belief that they had been known personally than did the women in surgery; in medicine, the trend was reversed - the women more frequently reporting being known personally (see Table 6).

Table 6: Students reporting that they had been known personally ('definitely' or 'to some extent') by their clinical teachers

<table>
<thead>
<tr>
<th></th>
<th>Medical units</th>
<th>Surgical units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Known by consultants</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Known by junior staff</td>
<td>27</td>
<td>14</td>
</tr>
</tbody>
</table>

Appendix 4: Publications

In accordance with the regulations of the University of Edinburgh, this appendix contains copies of papers that have arisen out of the research reported in this thesis. The first paper, 'Kind Hearts and Curettes' reports research which antedates the fieldwork reported in the thesis, but it provided the introduction to the area of medical education. The paper was based upon data collected by Professor Liam Hudson and Dr. C.R.B. Joyce, and I should like once again to record my thanks to them for allowing me to work on that material. The paper proved to be an introduction to one of the major themes of the thesis - that is, the topic of segmentation in the medical profession - although, as will be apparent, the approach adopted was somewhat different.
Kind hearts and curettes

Paul Atkinson

Some of the most popular romantic fiction is set in a hospital background. How similar are real life medical men to their fictional counterparts?

Romantic fiction, in books or magazines, is still the most popular reading material among women and adolescent girls. Many such stories are set in exotic environments, with gothic governesses, wronged princesses and buxom belles. At a more mundane level, the hospital world is becoming a setting for contemporary romance—helped by television serials such as Dr Kildare. Spin the paperback display stand at any railway station and you are sure to come across any number of books with cover designs of a beautiful young nurse in immaculate uniform, and a handsome young doctor with white coat and stethoscope: books with titles like Emergency for Nurse Selena, Prescription for a Nurse and Surgeon's Bride.

The romances come in three basic types: paperbacks of normal format and design, flimsy novelettes of handbag size, and companion booklets that present the stories in picture-strips. A vast number of novelettes are published, including a monthly series of "Hospital Romances" published by the Fleetway Press, which now runs to several hundred titles.

The cover blurbs of the novelettes give a fair idea of the basic plots: "A broken engagement made her leave hospital life for a while, but a new love brought her back." "Jen's working life had always been devoted to other people, and there had never been room for romance." "Doctor Jim: lawyer Ralph; which would be her choice? She was in love with a man in love with his work."

The medical theme is clearly a strong selling point, and the doctor-nurse cover picture is used irrespective of whether the nurse actually does marry a doctor—sometimes she gets herself a policeman or a patient. Stories that have little or nothing to do with hospitals or medicine often feature a character with a medical connection and so exploit the magic formula: Lucinda Marries the Doctor or Doctor's Daughter are typical medical titles for non-medical stories.

The majority of stories are set in hospitals and general practitioners rarely appear. Authors mostly keep to the well-known convention of romantic fiction—no sex, divorce or illegitimacy. As far as possible, drunkenness or drug addiction are avoided and insanity is rare, although the medical setting makes some mention of these otherwise taboo subjects a possibility. Although there are always patients in the background, their illnesses are always unspecified and treatment is equally vague—restricted to occasional pills, injections or nameless operations. Suffering is minimal and the occasional deaths painless. Beds are occasionally made, but the patients never seem to need a bedpan.

Typical characters are a handful of nurses—usually in training—a matron or ward sister, a couple of trouping doctors with a roving eye, a surgeon of about 30. There may also be a few medical students and interns, and possibly a senior consultant—Sir somebody-or-other. In the real world nurses are sensibly dressed and shod, and their uniform covers rather than reveals, but the nurse's uniform raises atavistic desires in the young men of fiction probably associated with memories of their prep-school matrons. Admittedly, their temptation is great: never were there such uniformly attractive young women as the nurses of the picture books, and their outfits, with their short skirts and high-heeled shoes, would never, in reality, pass matron. In the comic picture book, the nurses are all portrayed as dolly-birds with retousse little noses and sultry eyes, and though the prose novels tend to stress the heroine's beauty of personality rather than her physical appearance, they also imply that all nurses are highly attractive to their hospital male colleagues.

The young doctors are all drawn as supermasculine pin-ups, with broad shoulders and high cheek bones—the sort of men that women's magazines used to call "gorgeous hunks." (For the reason, they are nearly all called Stephen.) Sisters tend to be disciplinary, but matrons are rather like maiden aunts—they may be very authoritarian, or very warm and understanding towards the young nurses.

A close look at the stock characters reveals some interesting stereotypes. Many of their basic traits are common to all such romantic fiction: good nurses are those who don't spread bitchy rumours about the heroine or try to steal her man. The hero's intentions must be honourable and he should be old enough and settled enough for marriage. Other characteristics are more closely related to the world of medicine. The key male characters are a young doctor, attached to the girl at the outset, and a
slightly older man who finally gets the girl. Over and over again the young doctor is a gynaecologist; occasionally he is a paediatrician or physician, but he is never a surgeon. The older hero invariably is. This hero-surgeon is always portrayed as excelling, a manly and handsome figure, with a dominating, even aloof air. Although his looks cause a stir among the nurses, they find his personality leaves much to be desired; they find him hard and cold in manner, unapproachable and arrogant; our heroine is half attracted, half repelled. The turning point of the love story, the surgeon is involved in an emergency operation or outdoor rescue, in which he is cool, skillful and resourceful and a miraculously recovery is achieved. His simple masculine qualities are allowed finally to shine through and we (and the lovesick nurse) are allowed to forget his personal inadequacies.

The gynaecologist, on the other hand, is definitely a ladies’ man; smooth and personable. He is warm and forthcoming, but in the final analysis he is unreliable and may well prove to be a disappointment.

Unlike the withdrawn surgeon, the gynaecologist is, if anything, over-confident, too plausible for his own good, and tends to take women for granted. It is interesting to note that he is often called by a diminutive—Johnny, Jimmy, Johnny, Jimmy. 

Although not a common character, the general practitioner also has a personality of his own. Despite being seen as a valuable professional, he lacks the glamour of the hospital specialists. Interestingly, in these stories the or is either a married man, or, more uncommonly, a bachelor. And “I’m a doctor’s daughter and a doctor’s fiancee” is a common sentiment. Like the surgeon, he is manly, but, unlike him, he is warm, friendly and reliable: in other words, he is an ideal family man and father-figure.

Other specialists are rarely portrayed. Since insanity is more or less taboo, the psychiatrist seldom appears, and when he does so he turns out to be a difficult person to handle: he is portrayed as commendably warm and humane, but slightly dangerous.

In Vow of Silence (a picture book story), for instance, a surgeon’s wife, finding herself neglected by her husband, seeks the help of a young psychiatrist. His therapy seems to involve little more than taking her out in the evenings and they are on the brink of an affair before the surgeon confronts them; this is the first attention she has received for years and they are reconciled.

Anaesthetists, pathologists or pharmacologists also remain firmly in the background and are not seen as suitable for a major character. Perhaps they are considered too dull to attract a nurse.

Romantic medical fiction, then, contains a set of clearly differentiated stereotypes: How do they match up to the ideas of the medical profession itself? As part of a study on medical education I was carrying out, I investigated the attitude of a sample of final year medical students at a London medical school. The students were asked to rate surgeons, gynaecologists, paediatricians, general practitioners, pharmacologists and anaesthetists on a semantic differential—ie, a series of seven-point scales consisting of paired adjectives of opposite meaning. There were ten of these scales altogether: intelligent/stupid; dull/exciting; valuable/worthless; feminine/manly; warm/cold; hard/soft; imaginative/unimaginative; dextrous/clumsy; cultured/uncultured; and ambitious/unambitious.

The medical students tended to rate all the figures in a fairly favourable light—none, for instance, was seen as entirely stupid and all were seen as fairly valuable. But within that area of positive evaluation there were clear differences between the images of the specialists, with considerable agreement on these ratings between the students.

Consistent with his fictional counterpart, the surgeon was seen as highly intelligent, exciting, valuable, dextrous, ambitious and very manly; but, like the stereotype reluctant lover of the romance, he is seen as cold and hard. As one might expect, the gynaecologist and paediatrician were seen as very similar, both being rated relatively intelligent and exciting, though less so than the surgeon and, in contrast to him, seen as warm, soft and rather feminine.

The general practitioner was seen to fulfil the fatherly role assigned to him in fiction, in that he was seen as fairly manly, but very warm and fairly soft. He is seen as less intelligent than the specialist clinicians, but no less valuable. All four figures were given a similar, positive, evaluation on the cultural and imaginative scales.

In contrast with these four figures, the pathologist, pharmacologist and anaesthetist were all seen as relatively stupid, dull, unimaginative, uncultured and unambitious; fairly manly but cold and hard. They were, however, thought of as being as valuable as the more attractive clinicians.

In other words, where comparable, real life medical men were thought to resemble their fictional counterparts. And it appears that even after medical students finish their training, their images of the medical world are still remarkably close to the popular stereotypes. These images may also influence their ideas of specialists once they have started training. As they enter the medical world socially, the students must learn to take on the attributes of the profession. Appearance, mannerisms and even speech patterns must all fit, and personality characteristics or distinctive life-styles may also affect the choice of a specialised medical career.

But why should medicine be such a fertile setting
for romantic fiction? Of course, the physician is normally in a position of some advantage vis-a-vis his women patients and his privileged role might be considered sufficient reason for the hospital's emotional climate. But, in fact, a doctor-patient romance is extremely rare and the normal outcome of these stories is a doctor-nurse relationship. I would suggest another reason for a medical background: that the dynamics of these stock situations are promoted by a lay sociology.

The underlying theme of all romantic fiction is the search for a suitable match for the hero and heroine and the main interest lies in the misunderstandings, quarrels and near-misses from which they must be disentangled before they finally find each other. Heroes and heroines are always closely associated with traditional sex-roles—the heroines must be soft, feminine and warm, the hero dominating and masculine. The female stereotype is ideally suited to the nurturative, feminine role of the nurse, whilst the direct physical treatment of the operating theatre follows the male sex-role of bold and fearless intervention, as opposed to the less dramatic and more nurturative therapy of the physician.

The hospital ward, with its implied theme of progress and transition from physical disorder in the patient, through uncertainties and crises, to final health, provides an appropriate setting for the progression of the protagonists from romantic disorder to final reconciliation. The parallel between physical disorder to physical order, and the transition from emotional disorder to romantic compatibility, suggests that the underlying theme of the romantic fiction may be a subtle one. It represents a form of lay functionalism, where the analogy between the biological organism and social organisation is stressed; and particularly the relationship between dysfunction in the organic world and disorder in the social one.

The implied moral parallel between social and physical disorder reflects the hold that medical thought and metaphor has over much of our everyday thinking. We speak freely of unhealthy trends in the economy, dying environments and sick societies, and the most acceptable form for discussing deviance and social control is the language of disease.

Medical metaphor is not confined to social scientists. It is deeply embedded in our popular culture—where a mythical world of medicine, made up of character stereotypes and stock situations, provides a common framework for the discussion of sex roles and occupations; the world of work and marriage; and of healthy and unhealthy relationships between men and women.

The personality stereotypes current in popular mythologies would also seem to show the way in which the world of medicine is made out by the people in it.
Worlds apart

Learning environments in medicine and surgery

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in all countries of the world
Merton, Bloom, and Rogoff (1965) describe one restricted aim for the sociology of medical education as focusing on 'the nature of the social and psychological environment constituted by the medical school'. Important components of such medical school environments or 'atmospheres' include the relative status of the students and their relations with their teachers, and a central concern in such research is the nature of the effects of such environments on medical students' attitudes and values (Bloom, 1965; Walton, 1967).

Distinctive medical school environments have been described in a number of important American sociological studies. Partly by reason of differing sociological interests, but also reflecting important differences in the institutions studied, each presents a different picture of the position of medical students and their relation with their teachers.

Until recently, two studies have been pre-eminent. These are the study of Kansas University medical school by Becker and his colleagues (Becker, Geer, Hughes, and Strauss, 1961), and the study of Cornell undertaken by Merton and his collaborators (Merton, Reader, and Kendall, 1957). Merton et al. identified the medical student at Cornell as a 'student-physician': that is, he was regarded as a 'junior colleague' by his teachers, treated in an egalitarian manner, and was seen as being groomed for full professional status as soon as possible. The student culture in the school was described as a 'little society', in which the professional norms and values of the faculty were reflected and reinforced. In sharp contrast, Becker et al. described the Kansas student as a 'boy in white': he was seen as occupying a subordinate position vis-a-vis his teachers, and his progress towards professional qualification was seen predominantly as a long, drawn-out ordeal or obstacle race. The perspectives embodied in the student culture at Kansas were dominated by short-term preoccupations that were frequently at odds with those of the faculty: students tended to view their teachers with distrust.

The two earlier studies have recently been supplemented by Bloom's monograph on the State University of New York Downstate Medical Center (Bloom, 1971). This gives a picture even further removed from the world of the 'student physician'. The school's atmosphere was described by Bloom as characterized by mutual indifference or hostility between students and staff. There was no discernible student culture and the students appeared to be unable to discover any aspects of the institution with which they could identify. Whereas Cornell had been seen as sponsoring the students' progress towards qualification, the State University of New York, despite the high calibre of its intake, had a high wastage rate, and was seen by its students as a 'flunk factory'.

There is, then, rich documentation of American medical institutions, their distinctive atmospheres, and the position of medical trainees in them. In thinking about medical education in this country it is tempting to rely on this material - to label British medical schools (either individually or collectively) or British students as conforming to one or another of the American paradigms. Martin, for instance, on the basis of the ASME national survey, described the British student as comparing more closely with his Kansas counterpart, 'his perspective that of subservience to and alienation from his teachers' (Martin, 1966, cited in Walton, 1967). Tempting though this approach may be, it has its dangers. The profession of medicine, recruit-
Learning environments in medicine and surgery

The research from which this paper derives is concerned to do two things: first, it aims to provide detailed description from within a British medical school; second, and more specifically, it aims to document the varieties of learning environments within it. The findings reported here are from a study of the teaching of medicine and surgery in the fourth year (first clinical year) at Edinburgh Medical School. The research was conducted by means of direct observation of teaching situations, interviews with students, and questionnaires. The results presented below are taken from a questionnaire completed by 112 of the fourth year students (just under 80% of the whole class) at the end of the year 1971–72. Students' reported experiences in medicine and surgery are compared. By the end of the year, all students had spent two terms attached to medical units and one term on a surgical unit. Some items in the questionnaire asked all students to compare their experiences in medicine and surgery (ie each subject was evaluated by all the respondents), while other items sought information only about the clinical unit to which the students were attached at the time of the survey (ie each subject was rated by approximately half the students only). Of the students who replied to the questionnaire, 60 were in medical units, and 52 in surgical units: in comparison with the total numbers allocated to each specialty this represents a response rate of 76% from medicine and 78% from surgery. The clinical teaching was divided between 11 units in medicine and 7 in surgery: the mean number of students in each attachment was 7-18 in medicine (ranging between 5 and 8) and 9-71 in surgery (ranging between 7 and 12).

Results

Status and self-perception

The questionnaire contained three items that explored students' overall perceptions of their relative position in the two specialties. The first item to be considered was aimed directly at discovering the students' self-perceptions in terms of the paradigms outlined in the introduction. This item was adapted from the ASME/NFER survey summarized in the Report of the Royal Commission on Medical Education (1968). The Royal Commission questionnaire had asked for final year students' general self-perceptions as clinical students - producing a 'blurred average' response over all aspects of the clinical years. Of the total students surveyed for the Royal Commission, 43-0% thought of themselves as 'apprentices in a medical team', 31-6% as 'passive observers of medical practice', 20-1% as 'university undergraduates', and 5-3% as 'students at a technical school'. The need for greater sensitivity to contextual variation was demonstrated by the fact that the authors found 'a number of students who said that at times they felt as apprentices in a medical team and at other times as passive observers of medical practice' (Royal Commission on Medical Education, 1968). For the Edinburgh fourth year students, the 'technical school' category was dropped, and the students were asked to make explicit comparison between the two specialties they had experienced in the course of the year. Splitting the question in this way highlighted a sharp contrast between medical and surgical attachments. The results (Table I) show that whereas the majority of students (57-8%) thought of themselves as 'apprentices' in medicine, in surgery the majority (56-0%) thought of themselves as 'passive observers'.

ment to medical schools, the philosophy and practice of education all differ between the two countries. Without comparable detailed descriptions of British medical schools, the wholesale adoption of American models may blur some issues as much as it illuminates others.

In addition, the American reports in general contain one intrinsic weakness. There is a strong tendency to characterize the whole of a medical school as belonging to one type or the other. Becker et al. differentiate between the characteristics of preclinical and clinical study, and outline the students' work in each clinical specialty, but their discussion of students' experiences and attitudes remains at a general level - embracing features common to most or all areas of training. Similarly, Merton et al. (1957), though placing greater stress on such features as specialty choice, offer little discussion of areas of differentiation within the medical school, beyond an analysis of one innovatory programme. Bloom's (1971) comments on the State University of New York also tend to evaluations across specialties within the school - to a characterization of the school as a whole rather than locating shifts in 'atmosphere' within it.
A second item was again adapted from the Royal Commission survey: this related to the ease with which students felt they had formed relations with patients. The Royal Commission reported that 93.4% of the final-year students surveyed stated that they had no difficulty in establishing relations with patients, but 32.8% stated that they had experienced such difficulties in the past. "Those who had experienced difficulty at the end were definitely the same who experienced difficulty before", the authors continue, and suggest that this indicates that such difficulty with patient relations is a matter of personality (p. 350). By once more splitting the question between medicine and surgery for the fourth year students, it was possible to show that there are strong environmental influences as well as personality variables at work in determining the ease with which students make effective contact with patients. In medicine, the number reporting "no difficulty at all" in forming relations approximated to the two-thirds that were found in the Royal Commission retrospective question (56.3%), and less than 10% stated they had encountered 'moderate' or 'considerable difficulty'. In surgery, on the other hand, only 42% of the students reported 'no difficulty at all', while almost one-third had encountered 'moderate' or 'considerable difficulty' (Table 2).

The medicine/surgery difference was reinforced in the response to a further question, relating this time to how students saw themselves vis-a-vis patients. They were asked to judge how they themselves had been perceived by patients on the medical and surgical wards. Whereas the majority checked the role of 'junior doctor' for medicine (62.5%), the majority view for surgery was that they had been perceived as 'students' (Table 3).

The responses to these three general items, then, combine to present a coherent picture of the two specialties and of the fourth-year students' position in them. Medicine emerges as offering the students greater opportunities for patient contact, and an environment where he can feel himself in the role of 'junior colleague' rather than 'student': his position in surgery appears to be characterized by a more subordinate position—that of the 'student' or mere 'observer', with less opportunity for satisfactory contact with the patients. These differences point convincingly to the inadvisability of labelling all the students or all medical schools in Britain as conforming to one type or another. In terms of the American paradigms we would be hard put to it to allocate the Edinburgh school to any one category—at least on the basis of the fourth year students' opinions.

The more detailed questions relating to the specific clinical units that the students were attached to at the time of the questionnaire explored further some of the differences between the two specialties.

Teacher and taught

The students' perceptions of their relations with their clinical teachers were examined. Students were asked four related questions: to judge

Table 1. Students' reported self perceptions

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Apprentice'</td>
<td>63</td>
<td>29</td>
</tr>
<tr>
<td>'Student'</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>'Passive observer'</td>
<td>29</td>
<td>61</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>109</td>
</tr>
</tbody>
</table>

Note: The figures shown in Table 1 are not derived from independent samples, and so the usual z2 test of significance of differences is not appropriate here. The usual tests of significance for related samples are also not ideal, however. The McNemar test for nominal data requires that the responses be dichotomous, rather than the three categories in this case, while the sign test or Wilcoxon matched-pairs signed ranks test require the data to be ordinal (ie ranked)—an assumption about the data I would be unwilling to make. As it happens, the differences are so large that a test of significance is of academic value. (If one does dichotomize the Table into 'apprentice' and 'not apprentice' and performs the McNemar test, the difference is significant. P < 0.001.)

Table 2. Establishing relations with patients

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerable difficulty</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Moderate difficulty</td>
<td>9</td>
<td>8.0</td>
</tr>
<tr>
<td>Slight difficulty</td>
<td>39</td>
<td>34.8</td>
</tr>
<tr>
<td>No difficulty at all</td>
<td>63</td>
<td>56.4</td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>112</td>
</tr>
</tbody>
</table>

By the sign test. P < 0.001.

Table 3. Students believe that patients see them as

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior doctor</td>
<td>70</td>
<td>42</td>
</tr>
<tr>
<td>Nurse or orderly</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Student</td>
<td>32</td>
<td>58</td>
</tr>
<tr>
<td>Don't know what to make</td>
<td>9</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Note: The same comments apply here as to Table 1. (Dichotomizing the Table into 'junior doctor' and 'not junior doctor', the difference is significant. P < 0.001.)
whether consultant staff had got to know them personally in the course of their term's attachment, and if they thought that the more junior grades of staff had likewise got to know them. They were similarly asked if they thought that the clinicians had developed a close knowledge of their work and abilities over the term; this was again presented as two questions – one relating to consultant staff, and the second to those below consultant grade. These four questions were open-ended, and the answers were subsequently coded into three categories – those that were unequivocally positive or negative, with an intermediate category for responses of the sort 'perhaps', 'to some extent, I suppose', etc.

Few of the consultant staff in either specialty were definitely thought by the students to have developed any close personal contact with them. There were, however, rather more students from medical units than from surgical attachments who thought that the consultants had formed some degree of personal relation, though the difference was not a statistically significant one (Table 4).

Table 4. Do you think that any of consultant staff got to know you personally?

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Yes'</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>'Perhaps/to some extent'</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>'No'</td>
<td>31</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

$x^2 = 3.78; df = 2; P > 0.05$

More personal contact was reported in both specialties with staff below consultant level, but here again the medical attachments appeared to have fostered a greater degree of personal contact between the teachers and the taught (Table 5).

Table 5. Do you think that any of junior staff got to know you personally?

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Yes'</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>'Perhaps/to some extent'</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>'No'</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>51</td>
</tr>
</tbody>
</table>

$x^2 = 7.88; df = 2; P < 0.02$

These results were echoed when it came to academic matters. Once again, few of the students from either specialty were at all confident that their consultant teachers had formed a clear judgement of their work and ability, but overall such a belief was stated more frequently by students currently attached to medicine than those from surgery (Table 6).

Table 6. Do you think that any of consultants have developed close knowledge of your work and abilities?

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Yes'</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>'Perhaps/to some extent'</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>'No'</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

$x^2 = 7.89; df = 2; P < 0.02$

Again, more students in each subject thought that the staff below consultant level had been able to arrive at a judgement of their work. The distinction between the two specialties was maintained, however, and physicians were more frequently thought to have formed an impression of the students' work over the term (Table 7).

Table 7. Do you think that any of junior staff have developed close knowledge of your work and abilities?

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Yes'</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>'Perhaps/to some extent'</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>'No'</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

$x^2 = 7.71; df = 2; P < 0.025$

To summarize, in each specialty the clinicians of more junior grades were clearly felt to have developed closer relations with the students than had their consultant colleagues. At each level, however, physicians were more frequently seen to have developed a degree of personal contact with their students than had the surgeons.

Approaches to teaching
Medical and surgical teaching units appeared to be sharply contrasted in their approaches to teaching and in students' evaluations of their educational experiences. The surgeons appeared to be relying on a far more didactic approach, while the physicians were thought to place greater
emphasis on students’ involvement in the ongoing clinical work of the wards.

Students were asked to indicate whether their clinical attachments provided regular ‘tutorials’ on specific topics (e.g., therapeutics, postoperative care, etc.). There was a pronounced difference between the two specialties from this point of view, and the surgeons were clearly relying more heavily on such regular ‘tutorials’ than were the teachers in medicine (Table 8).

Table 8. Regular tutorials

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>No</td>
<td>41</td>
<td>68-4%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>52</td>
</tr>
</tbody>
</table>

χ²=32-05; df=1; P<0.0001.

The students were asked to give their opinions on the amount of time allocated to ward teaching and the amount of time spent in lectures and ‘tutorials’ in the teaching room. As one might expect from the results set out in the previous Table, students attached to surgical units more frequently reported that ‘too much’ time had been spent in the teaching room. In medicine, 73-3% of the students thought that the allocation of time to ‘tutorials’ was ‘about right’, whereas only 40-4% of those in surgical attachments expressed such satisfaction. It should be noted, however, that a sizeable minority of those in medical attachments would have liked more ‘tutorial’ teaching (Table 9).

Table 9. Proportion of time spent in lectures or tutorials

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too little</td>
<td>10</td>
<td>16-7%</td>
</tr>
<tr>
<td>About right</td>
<td>44</td>
<td>73-3%</td>
</tr>
<tr>
<td>Too much</td>
<td>6</td>
<td>10-0%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>52</td>
</tr>
</tbody>
</table>

χ²=23-6; df=2; P<0-001.

Correspondingly, students who were attached to surgical units more frequently stated dissatisfaction with the amount of ward work and bedside teaching they had experienced than did those attached to medicine. Exactly 75% of the students from medicine thought that the allocation of time to the wards was ‘about right’, an opinion that was shared by only 41-2% of those in surgery (Table 10).

In addition to information about ‘tutorials’ and ward teaching, students were asked about attendance at ward meetings or clinical conferences. As a teaching method, the ward meeting may often be unsuited to the specific needs of junior students. In interview, students frequently stated that much of the material discussed was ‘over their heads’. Nevertheless, many also described attendance at such meetings as ‘interesting’ in so far as it provides an opportunity to observe – and occasionally to participate in – the clinical work of the unit as a whole. The opportunity for students to attend such meetings, and thus to experience such involvement in the unit’s routine clinical work, was available to the majority of students from medical units (66-1%), but to comparatively few (26-9%) in surgery (see Table 11).

Table 10. Proportion of time spent in ward work and bedside teaching

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too little</td>
<td>11</td>
<td>18-4%</td>
</tr>
<tr>
<td>About right</td>
<td>45</td>
<td>73-3%</td>
</tr>
<tr>
<td>Too much</td>
<td>4</td>
<td>6-7%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

χ²=16-18; df=2; P<0-001.

Correspondingly, students who were attached to surgical units more frequently stated dissatisfaction with the amount of ward work and bedside teaching they had experienced than did those attached to medicine. Exactly 75% of the students from medicine thought that the allocation of time to the wards was ‘about right’, an opinion that was shared by only 41-2% of those in surgery (Table 10).

Finally, students were asked whether their group was ever subdivided for small group teaching. There was no consistent difference between the two specialties on this score – though medical attachments were more frequently reported to be divided ‘every day’ (20% as against 5-8% for surgery).

Discussion

In the introduction to this paper it was suggested that in investigating the social context of medical education it is unwise to ignore variations in learning environments within the medical school. The responses to the fourth year questionnaire
which have been reported here bear out that
caveat. During their first year of formal clinical
work, the students are exposed to two clinical
subjects - medicine and surgery. Their per-
ceptions of their experiences in each of these
specialties differed much in a number of ways.
In particular, their self-images in each specialty
were different, as were their reported relations
with clinicians and patients. The organization of
clinical teaching was also investigated and found
to differ between the two specialties.
There are clearly a number of factors in-
fluencing such attitudes. There were fewer
surgical units available for teaching purposes,
and the numbers of students attached to them
were correspondingly higher. There was no
evidence that surgical clinics were subdivided
into smaller teaching groups with any greater
frequency than were medical clinics - if any-
thing, the reverse was true. It appeared therefore
that there was a tendency for students attached
to surgery to be taught in rather larger groups
than were their colleagues in medicine; this
feature of the organization of teaching must have
engendered at least some of the feelings of
relative alienation and lack of personal contact
between students, patients, and teachers that
students reported for their experience in surgery.
The students' attitudes were likewise under-
standable in the light of the organization of
teaching in the two specialties. The surgeons
appeared to concentrate their teaching effort
more on didactic teaching in tutorial situations
than did the physicians, with a corresponding
lack of emphasis on ward teaching. Students in
surgery were also less frequently involved in the
unit's clinical concerns through the medium of
the ward meeting.
The extent to which such differences are re-
stricted to the Edinburgh school is beyond the
scope of this paper, but one can note a number
of general features of the two specialties that
bear on the clinical training of junior students.
An important difference between medicine and
surgery concerns the time spent on the wards by
patients. On average, surgical patients spend
considerably less time in bed than do medical
patients, and the medical wards usually have
some patients who are in for a lengthy stay. The
greater difficulty that students report in forming
effective relations with patients may well reflect
trouble in finding opportunities to see the same
patient over a sufficiently long period before he
leaves the ward.
Similarly, the pattern of admissions and treat-
ment also affects the scope of clinical teaching.
It is generally the case that by the time they are
seen on fourth year teaching rounds most
patients, both medical and surgical, will have
received treatment; many of their acute signs
and symptoms will have abated or disappeared
altogether. The problems that this poses for
bedside teaching of examination and diagnosis
are considerably greater for surgery than for
medicine. By the time students see surgical
patients, their various lumps and lesions have
frequently been removed or repaired altogether;
there is often nothing to observe but a fresh
wound. The scope for bedside work in history
taking, examination, and diagnosis is thus cur-
tailed, and the surgeons are more often forced to
rely on didactic teaching of postoperative care,
etc than are their colleagues in medicine.
In this paper I have referred to 'apprenticeship'
in a medical team as a self perception that
students may hold under certain conditions. By
that term I do not mean to suggest any necessary
'objective' features of clinical experience or
responsibility. In comparison with the appren-
ticeship served by his forebears, the medical
student of today occupies a very different
position. As Ellis points out, the student is no
longer as Flexner described him - 'a part of the
functioning machine' (Flexner, 1925) and the
rise of scientific university education has meant
the decline of apprenticeship in undergraduate
medical training (Ellis, 1963). Ellis goes on to
to comment on the modern student that 'less and
less is he a participant; more and more is he an
observer'. But within the contemporary organi-
zation of clinical curricula, there is room for
variation, at least in the student's sense of involve-
ment in the clinical unit, if not for his actual
participation in clinical work. Similarly, though
earlier forms of interpersonal relations between
teachers and taught may have been superseded
(cf. Ellis, 1963), there are still possibilities for
varying degrees of personal relation between
clinicians and their students.
The Royal Commission on Medical Education
spoke of removing 'the artificial distinctions
between "medicine" and "surgery" in the
In some ways this paper, by taking as its theme a
comparison between the two specialties, may be contributing to the preservation of this distinction. On the other hand, the findings presented above do suggest a number of real and important differences between the two subjects as they are presented to students and as they affect students' attitudes. Whether or not such differences would disappear with the advent of group teaching or integrated curricula is something we have yet to learn.

Summary
Previous sociological research into medical education has furnished us with a number of paradigms for the position of the student in the medical school. Such research has tended to treat medical schools as homogeneous. The present study – of students in their first clinical year at Edinburgh medical school – highlights differences in learning environments within the medical school. Students' perceptions of their clinical teaching in medicine and surgery were compared by means of a questionnaire. Medical and surgical attachments differed in a number of ways: the two specialties differed conspicuously in students' self-perceptions, and in their reported relations with clinicians and patients. The organization of clinical teaching was also found to differ between medicine and surgery. The overall impression was one of alienation, and a relative lack of personal contact in surgery, and a correspondingly greater sense of involvement in medicine. The findings suggest that we should take more careful note of differences within the medical school, and to be more chary of offering generalizations on the 'atmosphere' of a medical school or medical schools.

I am deeply indebted to Professor A. S. Duncan and Professor H. J. Walton of the Edinburgh Medical School, and to Professor Liam Hudson and Mr. Peter Sheldrake of the Centre for Research in the Educational Sciences for their help and support throughout my research. I must also thank Dr. A. E. G. Pilliner for his advice and reassurance on matters statistical. I am of course very grateful to the many students who have helped me in the course of my work and to the members of staff who bore my presence with such good humour.

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References
‘Centre’ and ‘periphery’: Further analysis of learning environments in the Edinburgh Medical School

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in all countries of the world
'Centre' and 'periphery': Further analysis of learning environments in the Edinburgh Medical School

PAUL ATKINSON2  Department of Sociology, University of Stirling

Key words
*EDUCATION, MEDICAL, UNDERGRADUATE SCOTLAND *SCHOOLS, MEDICAL *HOSPITALS, TEACHING TEACHING LEARNING RESEARCH PHYSICIAN-PATIENT RELATIONS EDUCATIONAL MEASUREMENT ATTITUDE OF HEALTH PERSONNEL QUESTIONNAIRES

In a previous paper (1973) I described some aspects of the Edinburgh medical school and students' perceptions of them. The paper was concerned with fourth year (first clinical year) students: in it I described some differences between students' opinions of clinical teaching in medicine and surgery. The discussion was based on a questionnaire which was completed at the end of the year by just under 80% of the fourth year students (see Atkinson, 1973, for further details). My main interest in that analysis was to comment on the phenomenon of *segmentation* in the medical school. It has now become a commonplace of writing on the professions that they are not monolithic. Despite their claims for a common shared corpus of knowledge, interests, and values, it has been demonstrated that there are significant areas of differentiation within professions, and within professional specialties. This first view is represented in the work of Goode (1957), who sees the professions as distinctively 'communities'. He believes that this is so, 'by virtue of these characteristics: (1) Its members are bound by a sense of identity. (2) Once in it, few leave, so that it is a terminal or continuing status for the most part. (3) Its members share values in common. (4) Its role definitions vis-à-vis both members and non-members are agreed upon and are the same for all members . . . .'

The opposite view is put by Bucher and Strauss (1961) - 'the assumption of relative homogeneity within the profession is not entirely useful: there are many identities, many values, and many interests'. Bucher and Strauss use the term 'segments' to refer to coalitions of interests and outlooks within an occupation. Segments may be defined by a number of criteria. Specialties may be thought of as major segments, though Bucher and Strauss maintain that closer investigation will reveal competing segments within specialties:

'Within a core specialty like internal medicine there are many different kinds of practice, ranging from that of a "family doctor" to highly specialized consultation, a service to other doctors . . . . Further diversity [is] introduced when professionals assign different weights to such activities as research, teaching and public service' (Bucher and Strauss, 1961).

In my earlier paper I took previous researchers to task for failing to take account of such segmentation in descriptions of medical schools. The majority of approaches (coming almost exclusively from the United States) have discussed 'student culture' and 'social atmosphere' in medical schools as if they were internally undifferentiated (c.f. Merton, Reader, and Kendall, 1957; Becker et al., 1961; Bloom, 1971). The discussion was confined to the main distinction that is encountered and understood by the fourth year students in the course of their clinical work - that between medicine and surgery - the two specialties taught during the year. I showed how there were systematic differences in students' self-perceptions in
the two specialties, and in their perceptions of their relations with their teachers and their evaluations of the teaching arrangements. Though the medicine/surgery discrimination is an important one, it is by no means the only level of segmentation in the medical school of relevance to the students. Obviously, at the most detailed level of analysis, the individual clinical units to which students are attached for ward teaching offer unique learning environments. The detailed day-to-day teaching arrangements, consultants' specialist interests, their clinical style, and teaching style are seen by students as providing a distinctive 'atmosphere' on each unit.

The Edinburgh medical students also appeared to recognize an intermediate level of segmentation – concerned with the hospitals where the fourth year teaching units were located. Just as individual units were felt to provide distinctive environments, so it was felt that units within the same hospital tended to provide similar environments. Hospitals were thought to colour individual units with general features of their 'atmosphere'.

One major element in students' perceptions of hospitals and their atmospheres depended on a binary classification. Many of the students distinguished between what they called 'central' and 'peripheral' hospitals. The 'centre' was said to be occupied by the Royal Infirmary, which housed six of the medical units and four of the surgical units attended by fourth year students. The hospitals that were frequently described as 'peripheral' were those of the Northern Group – the Western General, the Eastern General, and the Leith Hospitals.¹ It must of course be stressed that these designations are those that are applied by the students themselves. In using them in this paper I do not mean to imply that I personally regard these hospitals as 'central' or 'peripheral'; they are 'folk' terms. They are also relative terms; in a wider context (e.g. in discussing preregistration year posts) the students might describe all these Edinburgh hospitals as 'central', and locate the 'periphery' outside the city altogether.

In the course of discussing their clinical units – both in medicine and surgery – the students often claimed that there were consistent differences between the 'central' and 'peripheral' hospitals. When I surveyed the students on their perceptions of their first year of clinical studies I was, therefore, interested to see if their responses indicated any differences between these two types of clinical attachment (see Atkinson, 1973, for details of the survey).

As I have already indicated, there are important differences between medicine and surgery. In the following analysis I have presented the data from the two specialties together (the numbers become too small if one keeps the specialties separate). In every case, however, there is a consistent difference between 'centre' and 'periphery' in medicine and surgery. At the end of the questionnaire there was a blank sheet where students were invited to add extended comments on their clinical teaching. I have quoted some comments from this source, and from interviews I carried out, to illustrate points of the argument.

Teaching arrangements
In my earlier paper I discussed students' attitudes towards two main methods of clinical teaching – ward work and bedside teaching on the one hand, and 'tutorials' on the other. I demonstrated that there are differences between medicine and surgery in the relative stress they place on these two major teaching methods. There are also differences between central and peripheral units. First, two aspects of tutorial teaching will be highlighted. Some units provide tutorial teaching in the form of a planned series of topics, regularly scheduled and with specific topics often specified for the various teaching sessions. This contrasts, for instance, with the ad hoc use of the tutorial room for a discussion of points of interest as

¹The Royal Infirmary of Edinburgh is the original teaching hospital of the Medical School and is related to the Medical Quadrangle. The hospitals in the Northern Group were formerly Municipal hospitals in other parts of the city which have more recently been brought into play as teaching hospitals. The Western General Hospital and the Royal Infirmary of Edinburgh are now regarded as the main complementary teaching hospitals of the Medical School.

During the period of my study, some fourth year teaching took place at the Northern General Hospital, but no students were attached to it at the time of my questionnaire survey, and I have not included it in my discussion.
and when they crop up in the course of bedside teaching. One question that dealt with tutorial arrangements, therefore, asked the students to indicate whether there were regular, scheduled tutorials on specific topics. The results, given in Table 1, show that students more frequently reported such regular sessions from ‘central’ units than from the ‘periphery’.

Table 1. Provision of regular tutorials

<table>
<thead>
<tr>
<th></th>
<th>‘Central’</th>
<th>‘Peripheral’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>48</td>
<td>15</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>33</td>
</tr>
</tbody>
</table>

\[\chi^2 = 19.98, \text{d.f.} = 1, P < 0.001\]

Secondly, I inquired into the students’ opinions regarding the proportion of time devoted to tutorials. This item was coupled with a similar item relating to the proportion of time devoted to ward work and bedside teaching. The responses for the question relating to tutorials are shown in Table 2.

Table 2. Students’ opinions on proportion of time devoted to tutorials

<table>
<thead>
<tr>
<th></th>
<th>‘Central’</th>
<th>‘Peripheral’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>About right</td>
<td>33</td>
<td>31</td>
</tr>
<tr>
<td>Too little</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

\[\chi^2 = 8.06, \text{d.f.} = 2, P < 0.02\]

There was a tendency for students from ‘central’ attachments to report ‘too much’ tutorial work more frequently than those from ‘peripheral’ units (39% as against 17%). Rather more from the ‘periphery’ reported that the allocation of time was ‘about right’, and a higher proportion from the ‘periphery’ thought that too little time had been devoted to tutorial teaching (18% as against 7% of those from ‘central’ units).

When we turn to the corresponding question relating to time spent in the wards, the differences between the two types of units are repeated (Table 3). Ward work and bedside teaching are clearly favourably perceived teaching methods (cf. Royal Commission on Medical Education, 1968: p. 350), and very few students in either specialty reported that they had received ‘too much’ of this type of instruction. But whereas 72% of those from the ‘periphery’ thought that the time devoted to this had been ‘about right’, this opinion was shared by only 50% of those from the ‘centre’. Correspondingly, whereas 48% of those in ‘central’ units thought there had been ‘too little’ ward work, only 19% of those from the ‘periphery’ agreed with this statement.

Table 3. Students’ opinions on proportion of time devoted to wardwork and bedside teaching

<table>
<thead>
<tr>
<th></th>
<th>‘Central’</th>
<th>‘Peripheral’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>About right</td>
<td>31</td>
<td>34</td>
</tr>
<tr>
<td>Too little</td>
<td>30</td>
<td>9</td>
</tr>
</tbody>
</table>

\[\chi^2 = 6.3, \text{d.f.} = 2, P < 0.05\]

Expected frequencies in first row insufficient for calculation of \(\chi^2\)

Professional and educational orientation of units

One can classify the concerns of clinicians in teaching hospitals under three main headings – teaching, research, and patient care. Students construct views of clinical units around these themes. For example, one important evaluative criterion that students use is the relative interest and stress that their clinical teachers place on their teaching duties. Or, more strictly, students’ perceptions of their teachers’ degree of interest and commitment to educational work. In the course of my interviews and informal conversations with students, feelings that the staff of some units were very keen on teaching and those of others largely indifferent were commonly stated. Similar sentiments were expressed in a number of extended comments at the end of the questionnaire, e.g.

‘noticed a great difference in the teaching of clinics. In 2nd term the Medical Unit [“central”] did not seem very interested in teaching . . . . In 1st term Medical Unit . . . [“peripheral”. . . . under Dr ——, who was very interested in teaching, and organized his teaching very well, and supervised all the teaching himself . . . .”]

or

‘. . . my general impression has been that the staff in peripheral hospitals are more interested in their jobs and the teaching of clinical subjects to students . . . .”

(Questionnaire comments)
I therefore included an item relating to this in the questionnaire. Though a number of individual students had expressed the feeling that indifference was more commonly encountered in surgical units, there was no difference between the two major specialities. The item did discriminate between 'central' and 'peripheral' units, however. The students were simply asked to indicate how they saw the clinicians' feelings about teaching. There were four categories provided for their responses: 'none of the staff seems very interested in teaching us'; 'a few of the staff . . .'; 'most of the staff . . .'; 'all of the staff . . .'. The responses to this item are detailed in Table 4, where the categories have been condensed into a twofold discrimination.

Table 4. Students' perceptions of staff interests in teaching

<table>
<thead>
<tr>
<th></th>
<th>'Central'</th>
<th>'Peripheral'</th>
</tr>
</thead>
<tbody>
<tr>
<td>None/a few interested</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Most/all interested</td>
<td>43</td>
<td>47</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 13.32, \text{ d.f.} = 1, P < 0.001 \]

In general, the majority of students felt that most or all of their teachers had shown an interest in teaching them; but from the 'central' units there was a sizeable minority who felt that few or none of their teachers had been so enthusiastic (31%): for the 'peripheral' units this belief was subscribed to by just one student in medicine, and by none of those attached to surgical units.

A second element in the students' constructions of unit orientations is based on the distinction between 'science' and 'practice'. These two concerns - ideally complementary, no doubt - are typically seen as opposed by students in their evaluations of the teaching they receive, e.g.

'Dr —— he was by far the best of the consultants. He was an extremely good teacher. He always explained things very well and he had a very good attitude towards his patients. I don't think he was interested in research and he was certainly more interested in his patients than most specialists . . .'

'There are big differences between some of the consultants - some consultants are interested in the patients, like Dr ——, and sort of treat them like human beings with a complaint; others sort of treat the patient as an example of such-and-such, and they are in hospital because the consultant is interested in research or something, and the treatment is just an academic exercise.' (Interviews)

The distinction was seen by many students as distinguishing between the centre and the periphery. The 'scientific' approach was linked with the notion of specialization of clinical interests, as opposed to general medical or surgical practice. The constellation of professional values associated with 'science'/specialization was contrasted with one of a holistic approach to the patient. This was typically expressed in the student cliché that scientifically-oriented clinicians treated their patients as 'cases', and failed to regard them as 'people' first and foremost.

The questionnaire contained a number of items that bore on these themes. The students were asked to indicate whether they thought that the approach was primarily 'research and scientifically-oriented medicine', 'practice and patient-oriented medicine', or whether the clinicians were 'equally interested in both'. The opinions of the students regarding their units' orientations are detailed in Table 5. No students from a 'peripheral' unit in either medicine or surgery saw their unit's primary orientation as purely 'scientific' in nature, whereas 14% of those in 'central' units saw this as the main concern. On the other hand.

Table 5. Students' evaluations of the orientations of their clinical units

<table>
<thead>
<tr>
<th></th>
<th>'Central'</th>
<th>'Peripheral'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Scientific'</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>'Both'</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>'Practice'</td>
<td>23</td>
<td>33</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 14.58, \text{ d.f.} = 2, P < 0.001 \]
68% of those students who were in 'peripheral' attachments saw their unit's interest as 'patient and practice' in orientation; the corresponding figure for 'central' units was 36%.

In the same way, when it came to a consideration of the degree of specialization encountered on the unit, the two types of clinical attachment were contrasted. Students were asked to indicate whether they thought that their unit's clinical interests were 'very specialized', 'fairly specialized', 'fairly general', and 'very general'. For both specialties, 'central' units were more frequently seen as 'specialized' by the students attached to them, and 'peripheral' units were more frequently seen as 'very general'. The results are detailed in Table 6. (Since only one student in any type of unit saw his attachment as 'very specialized', that category has been condensed with the 'fairly specialized' category.)

Table 6. Students' evaluations of the degree of specialization of their clinical units

<table>
<thead>
<tr>
<th></th>
<th>'Central'</th>
<th>'Peripheral'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very/fairly specialized</td>
<td>19 30%</td>
<td>9 18%</td>
</tr>
<tr>
<td>Fairly general</td>
<td>42 66%</td>
<td>22 45%</td>
</tr>
<tr>
<td>Very general</td>
<td>2 3%</td>
<td>17 35%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

\( \chi^2 = 19.96, \text{d.f.} = 2, P<0.001 \)

However, students were also asked to indicate whether they thought that clinicians taught their own specialist interests 'too often', 'not often enough', or whether the amount of stress laid on them was 'about right'. In all cases, the majority of students had been satisfied with the amount they had received. In other words, though there was seen to be greater stress of specialization in the centre, the majority of students felt that it had not been overstressed there – nor indeed that it had been underplayed in the peripheral attachments.

I mentioned above that the 'scientific' approach was frequently seen as being linked with a lack of regard for 'patients as people'. In the course of interviews, students were frequently critical of what they perceived as an overdetached attitude on the part of research-oriented practitioners. In one question the students were asked to comment on the nature of the doctor-patient interaction that they had observed on their units. (The single question was something of a blunt instrument, and the topic deserves more careful treatment.) The question was an open-ended one, and the responses were subsequently coded into three categories: those that were unambiguously favourable, those that were unambiguously negative, and those that were equivocal, or 'indifferent'.

Table 7. Students' perceptions of doctor-patient relations

<table>
<thead>
<tr>
<th></th>
<th>'Central'</th>
<th>'Peripheral'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Good'</td>
<td>30 51%</td>
<td>28 62%</td>
</tr>
<tr>
<td>'Indifferent'</td>
<td>23 39%</td>
<td>14 31%</td>
</tr>
<tr>
<td>'Poor'</td>
<td>5 8%</td>
<td>3 6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

As can be seen from Table 7, this apparent difference was not consistently reflected in the replies to this questionnaire item. Though a slightly higher proportion of students from 'peripheral' units evaluated such relations as 'good', there was no significant difference between the two types of clinical attachment.

Academic level of clinical units

A further construct that entered into students' understandings of clinical units and their educational 'atmosphere' was their perception of the academic level expected of them. This was part of the more general perception that went under the heading of 'high-powered'. High-powered units were felt to demand a higher level of effort from students – to keep them 'on the go'. e.g.,

'Last term Nicholas Payne was in Dr …'s unit at the … ['peripheral'] … hospital. He finds the main difference between there and here [central unit] is that on this unit there is 'more teaching' and it is 'more high-powered.' (Interview)

'Jane found it more "high-powered" here ["central" unit] – that the chief "keeps us on the go" …' (Interview).

Students were asked to evaluate the academic level of the unit they were on. They were asked to indicate if they found it 'much too high', 'a bit too high', 'a bit too low', 'much too low' or 'about right'. Few students in any
variety of clinical unit were very critical, but there was a discernible trend among the critical responses. Thus among those who were dissatisfied with the academic level, there were approximately twice the proportion who felt it was ‘too high’ in ‘central’ units than in ‘peripheral’ units (11% and 6%, respectively). Of those who thought the level was ‘too low’ for them the position was reversed: 11% of those in the ‘centre’ reported such dissatisfaction, whereas 22% of those in the ‘periphery’ did so. The responses to this item are detailed in Table 8. The five categories have been condensed to a three-way classification, as very few students checked the most extreme responses: only two students from all units felt that the level had been ‘much too high’ for them, and only one felt that it had been ‘much too low’.

Table 8. Students’ perceptions of academic level of clinical units

<table>
<thead>
<tr>
<th></th>
<th>‘Central’</th>
<th>‘Peripheral’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too high</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>About right</td>
<td>49</td>
<td>34</td>
</tr>
<tr>
<td>Too low</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>48</td>
</tr>
</tbody>
</table>

$x^2$=3.20, d.f.=2, NS

Discussion

In this paper I have been concerned to develop the theme of segmentation in the medical school as it is reflected in students’ perceptions and evaluations of their clinical attachments. The aspect of the study reported here bears many resemblances to Kendall’s study of ‘learning environments’ of hospitals (Kendall, 1963). Kendall examined the ‘atmosphere’ of internships and residencies of 167 hospitals in the United States. The hospitals were classified on the basis of their size and their degree of affiliation to a university centre. For the purposes of the present paper the most significant of Kendall’s findings was that respondents in closely affiliated hospitals more frequently reported a ‘cosmopolitan’ orientation in their training programmes, while those from less closely affiliated hospitals more frequently reported a ‘local’ orientation.

The notion of locals and cosmopolitans was first developed in connexion with patterns of influence in communities (see Merton, 1949). The ‘local influentials’ were those found to be primarily oriented towards the community and its problems rather than the affairs of the wider world: the cosmopolitan influentials were those who were found to be more interested in what was going on in the world outside their immediate community, and to have fewer personal links with other community members. Kendall summarizes the application of these categories in the field of medicine in this way:

‘Here the equivalent of a local influential is the physician who is primarily concerned with what is going on within his immediate environment: with his relations with patients and other doctors in the community . . . . In contrast, the medical equivalent of the cosmopolitan influential is the physician primarily oriented to what is taking place outside his immediate environment . . . . To put it more succinctly, we define a local orientation as one in which the physician is primarily concerned with patients and problems of practice, and a cosmopolitan orientation as one in which he is primarily concerned with scientific medicine and research.’ (Kendall, 1963: p. 216)

Similar discriminations have also been described for industrial scientists (Colegrove and Box, 1970), and for computer programmers (Sheldrake, 1971).

It was not surprising that Kendall found a cosmopolitan-local difference in considering a wide range of hospitals, including those with no university affiliation. It is perhaps more striking that a discrimination of the same sort should be apparent in students’ perceptions of the learning environments provided by the hospitals of a single medical school.

There was a clear indication that students saw ‘central’ units as more interested in scientific, more specialized, medicine, and ‘peripheral’ units as more oriented towards patient-centred medicine, and an underlying cosmopolitan-local dimension can be seen in their educational commitments. Whereas staff in the ‘centre’ were seen to be more concerned with creating medical knowledge, ‘peripheral’ staff were seen to be more preoccupied with transmitting such knowledge to their students. The differences in the organization of teaching arrangements can also be seen in this light. ‘Central’ units appeared to be characterized
by a greater reliance on the tutorial as a means of instruction and ‘peripheral’ units to rely correspondingly more on ward work and bedside teaching: the tutorial is more suited to the presentation of ‘scientific material or technical discussion’ (e.g., laboratory findings, formal teaching on therapeutics, etc.).

The present analysis must be seen as an incomplete and tentative account—with the data to hand it cannot be otherwise. As in my discussion of medicine and surgery, I have attempted to point a way towards more detailed investigation of the medical school as an institution. Just as we need to be aware of segmentation and differences of interest in the profession at large, so we need to be aware of how much segmentation may be reflected in the medical school.

Although the students often spoke of the different types of clinical attachments and their attributes in terms of opposites, it is not necessary to see them as in competition. In so far as they do present differences in approach, the various types of clinical unit can be seen as complementary. In the course of their undergraduate careers students are attached to firms that offer contrasting professional styles, and thus gain a variety of clinical experience. In the short term some students may find some differences a source of criticism and unfavourable comparison. In the longer term, they may find the different approaches complementing each other to provide a broad experience, and a perspective by which career options and professional orientations may be formulated.

Summary
A questionnaire was completed by approximately 80% of fourth year students at Edinburgh medical school. Their perceptions of clinical units in the ‘centre’ and ‘periphery’ are compared. The differences between the two varieties of clinical attachment were found to be analogous to the distinctions between ‘locals’ and ‘cosmopolitans’. ‘Central’ units corresponded to the cosmopolitan pole of the dichotomy, characterized by a perceived commitment to specialized, scientific medicine; the ‘peripheral’ units were seen to possess local attributes—including a greater commitment to general, patient-oriented medicine. ‘Peripheral’ units were also felt to be distinguished by greater interest in teaching on the part of staff members.

I should like to thank Professor A. S. Duncan, Executive Dean, and Professor H. J. Walton, professor of psychiatry, both of the Edinburgh Medical School, and Professor Liam Hudson and Mr Peter Sheldrake, both of the Centre for Research in the Educational Sciences, for their help and advice in the course of my research. I also wish to thank the many students and staff members who made my research possible and who made it such an enjoyable experience.

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References
Upstairs, downstairs: Medical students in their first clinical year and their previous experience of work in hospitals

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Department of Sociology, University College, Cardiff

Summary
In a study of Edinburgh students in their first clinical year it was found that a sizeable proportion had had some prior experience of hospital life and work from vacation jobs—such as being porters, auxiliary nurses and so on. Students' retrospective accounts of such experience are reported. The most salient aspect of hospitals seen from this vantage point concerned the division of labour between grades of staff, and the hierarchical organization of hospital personnel. Students saw the experience primarily as a chance to see medicine 'from the other side'. It is suggested that such experiences can be drawn on in the teaching of sociology to undergraduate students.

Key words: *Education, medical, undergraduate; *Hospital personnel; *Attitude of health personnel; Allied health personnel; Nurses' aides

Methods and findings
The undergraduate curriculum in the Edinburgh medical school follows the time-honoured form in that it has a division between preclinical and clinical phases of study. The first 3 years of the course are devoted to work in basic and medical sciences. In the fourth year students first encounter formal instruction in clinical work—beginning with Medicine and Surgery. The distinction between preclinical and clinical studies marks a decisive break in the formal curriculum of the medical school. The transition to clinical work is also a significant 'benchmark' in students' perceptions of their own status passage and their career through the undergraduate course. They talk of it as marking a passage to real work of medicine, and the change is eagerly anticipated (cf. Becker et al., 1961). The move into the clinical phase signals the students' first sustained periods of work in the hospital wards as medical students. But it does not necessarily herald their first encounter with life on the wards and hospital work.

During the early days of my field research in the Edinburgh school, I was made aware of the fact that a number of students had previously worked in hospital settings—as nurses, orderlies, porters and so on. Thus I found myself conversing with students who were implicitly or explicitly comparing their ward work or bedside teaching with their own previous experiences of hospital life. Reports of such conversations soon found their way into my field notebook. For example, after one mid-morning coffee break, I noted the following:

'Arthur Gardiner and Harry Grant [pseudonyms] had both had some experience of mental hospitals. Gardiner said that he had once wanted to be a psychiatrist, but his experience had put him off. He had worked in a hospital in his home town, and the "old biddies" sitting around, looking up blankly (he imitated their vacant stare) had put him off psychiatry completely.

Harry Grant said that his experience with psychiatric patients had been happier. He recounted a story of a schizophrenic who started each day by declaring loudly the day of the week. "Tuesday morning", he would announce. "Mind you, that's just about all he did say", Harry added. He said he thought it was important to deal normally with psychiatric interviews: you can't start by asking, "Who's the King of England?"

In themselves the remarks were pretty inconsequential, but their occurrence needs to be set against the
background of their formal instruction. At the time when they were talking, the students were being introduced to taking psychiatric interviews, as part of their general introduction to clinical work. They had the task of taking such histories from patients in the general medical wards, and had small group sessions with a psychiatrist to discuss their 'findings' and also to explore their own reactions to this exercise. Such introductions to psychiatric work were a talking-point among many of the students. They debated among themselves a number of issues that arose. They discussed their own feelings on talking with patients on potentially distressing or embarrassing aspects of their private lives. Amongst other things, they questioned whether such activities were justified as 'purely academic' exercises. Several discussed their own unease at asking 'silly' questions in attempts to discover the patient's psychological status (like asking them if they knew what date it was, etc.). Again, there was disagreement over the validity of the psychiatrist's interpretations of the patients' replies, and indeed over the adequacy of psychiatric explanations in general. Some espoused a strong orientation towards organic explanations and tended to dismiss psychosomatic models as unfounded. Again this background of debate, then, the two students I was with over coffee set their own reactions within a context of previous personal experience. Thus Arthur Gardiner was dubious about the usefulness of the psychiatric work they were doing and the efficacy of psychiatry in general. He partly justified his antipathy by reference to his past experience whilst working as a nurse in a psychiatric hospital. Similarly, Harry Grant was much more favourably disposed toward the specialty, and validated his attitude by reference to his experience. Whereas Gardiner picked on the depressing aspect of such work, Grant tended to emphasize what he saw as more endearing qualities of the patients' peculiarities.

As time went on, it became apparent that a large number of students had previously obtained some experience of work in hospitals, and were using this as a reference point in talking about their clinical instruction, and the problems they encountered in their work with doctors and patients. Thus, students came to discuss what they saw as problems in communicating with patients in the light of such previous experience. Again, this can be illustrated from an extract from my field notes.

On the coach [from the hospital back to the medical school] I talked with Alan Pickering. I asked him what he was finding most difficult so far. He replied, "I don't want to say that the patients are stupid—but I find it very difficult to get through to them. I find it hard to pin them down." He explained that he found it difficult to phrase his questions to the patient in such a way as to get straightforward answers. People, he explained, were always rambling on about their own personal experiences.

He told me he had worked as a nurse previously, but the experience then had been totally different: as a nurse one encouraged the patients to talk at length about themselves. This, he thought, was a major function of the nursing role.

Thus, the student's present difficulties were highlighted by reference to the hospital work he had already done. In particular, in this case we can note the implicit contrast between the work of the doctor and that of the nurse. Here it is exemplified by the student's perceptions of talk with patients. Having begun clinical medicine, as opposed to paramedical work, the purpose of his talk with patients is seen to differ. His communication with patients is now conceived in line with the doctor's position. What appears to have been learned from the nursing experience is not direct training for the clinical work of the fourth year—but rather some notion of the division of labour among hospital personnel. As I shall go on to describe, this is a major theme of students' prior exposure to hospital work.

At the end of the students' first year of clinical studies, I distributed a questionnaire concerned with their perceptions of the year's work (cf. Atkinson, 1973). As one item in that survey, I asked the students whether they had ever undertaken clinical work of some sort, as a nurse, porter or whatever. Additionally, I asked them if such experience had provided a useful grounding in interacting with clinicians and patients.

In all, 112 students returned completed questionnaires—just under 80% of the year group. Of those who replied, fifty-six—exactly half—had had a job of this sort at some time. Below I present some analysis of that item, and of the extended comments that students wrote on the general usefulness of such work.

In the first place, there was a sharp difference between the proportions of male and female students who had undertaken such work (see Table I).
Students' experience of work in hospitals

| TABLE 1. Proportions of male and female students who had had a 'clinical job' |
|-----------------------------|-----------------------------|
|                             | Male | Female |
| Had a 'clinical job'        | 37 (44%) | 19 (68%) |
| No 'clinical job'           | 47 (56%) | 9 (32%) |
| Total                       | 84 | 28 |

The sex difference may arise from female students, easier access to temporary work in the strongly feminized area of nursing. Alternatively, it may reflect a sex difference similar to that described by Walton (1968)—also for Edinburgh students. Walton describes the female students as tending to be more patient-centred than their male colleagues, who stress the more technical aspects of medical work. Thus the women may have sought out jobs that brought them into close personal contact with clinical work more frequently than the men. (In fact, both possibilities are reflections of culturally approved sex roles. The 'feminine' character of nursing and the female-associated patient-centred approach both depend upon traditionally stereotyped female characteristics of warm, nurturative interpersonal styles.)

Of the students who had taken such a job forty-eight (or 86%) believed that it had been of some value to them in understanding the clinical situation. But what appeared from students' comments was not that it provided directly applicable skills to doctor-patient interaction or the like. Rather, students tended to stress the insight that such work had given them into the general social functioning of the ward. They emphasized the knowledge that they had acquired of the routine ward work, which now provided the background for their activities. Also stressed was the degree of insight that had been gained into the position of patients in the hospital. In general, the attitude that emerged most strongly was that it had provided a view of clinical life 'from the other side'—a sort of 'Upstairs, downstairs' perspective on hospital organization and the work of its staff. From their fourth year on, the students will be primarily associated with the doctors teaching them. They will have crossed the divide that separates the 'medical' from the 'paramedical'. In their comments on their previous experience they drew explicit contrasts between this present position and their earlier glimpse of life below stairs, e.g.

'Three summers in Sheffield—8 weeks each time as a porter. Very useful to get an insight into how hospital works from the bottom end!' (Male)

'Nursing assistant in mental hospital. Extremely valuable insight into the problems associated with mentally disturbed children: the strain under which the staff worked and the resulting impact on the children. Kitchen-maid in hospital—insight into hospital hygiene—terrifying!' (Female)

'I worked as a porter before coming to Edinburgh (for 2 months). It has been of some use in seeing the opposite end of the doctor's counter.' (Male)

'Two 6-week periods as operating theatre porter and technician. Great fun; quite hard work. Meet plenty of people—see how the other side live and work. Attitude of surgeons and anaesthetists to the theatre staff is fascinating. It's all experience—it all helps.' (Male)

'Yes, nursing auxiliary one summer (never again!). Useful in appreciating what is expected of a lower grade nurse, and the back-biting and hierarchy that exist in most hospitals. Was great fun at times though—although one always had to remember the "pecking order".' (Female)

As I mentioned earlier, then, students appeared to have picked up ideas about the division of labour and the hierarchical organization of hospital personnel. From the point of view of their emergent identities as doctors, they were able to look back and adopt the alternative perspective of other members of the ward staff. In all, fifty-two students appended extended comments on their clinical experience. Three of these were from students who had deliberately avoided such employment. (They commented that they were already heavily committed to medicine and would be for the next 40 years. They therefore aimed at broadening their experience outside the medical arena.) Of the forty-nine remaining students, twenty-nine made comments which referred to aspects of the 'other side' perspective, whether from the point of view of nurses, porters, maids or whatever.

Nineteen students added comments which indicated that the experience had been of some use in their present dealings with patients, although this did not preclude references to the 'worm's eye view' as well, e.g.

'Very interesting to see patients and doctors from nurses' point of view and understand their problems. Patients tend to talk more freely to lowly nurses—one can learn much from them.' (Female)
Six weeks as a ward orderly in Stoke Mandeville Hospital last summer. This was extremely useful to develop effective relationships with patients and nurses (not doctors!). Also some specialized information of value and nursing experience.

(Male)

Worked for two summers as an auxiliary psychiatric nurse. Worked one summer on a research project into bronchogenic cancer. Psychiatric nursing helped in establishing relationships with patients.

(Female)

Yes: nursing auxiliary in labour ward of maternity hospital—very helpful seeing the "other side", and gaining confidence in dealing with patients.

(Female)

One other item of the questionnaire asked the students to indicate whether they thought they had experienced any difficulty in forming relationships with patients. Cross-tabulation of this item with having had a medical job did not indicate any relationship between the two for the whole class, however.

Only two students suggested that they had in any way gained some valuable experience in interacting with doctors, whilst five explicitly ruled out the idea, e.g.

'... See the other side. Relationships with clinicians more or less non-existent. They don't appear to appreciate who does their nursing care, except for staff-nurses and sisters.' (Female)

Again, the underlying emphasis was on the perception of the disjunction between doctors and other workers lower down the hierarchy.

The questionnaire asked students to indicate if they thought that they had been personally known by their clinical teachers; in the light of the extended comments, it is hardly surprising that the experience of a hospital job had no relationship with students' perceptions of such relationships with the doctors who taught them.

The analysis did suggest, however, that, in very general terms, having had such a job might lead students to feel more a part of things in their attachment to clinical units. At any rate, this trend was observable in medical units. Students were asked to indicate their overall self-perceptions in medical and surgical attachments; they were given a choice of three categories—"an ordinary university undergraduate", "an apprentice in a medical/surgical team" and "a passive observer of medical/surgical practice" (cf. Atkinson, 1973). In medicine, those with clinically-based work experience more frequently reported feeling that they had been an apprentice in a medical team than those without equivalent experience. (Self-perception was not a sex-linked variable.) The responses are detailed in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>Had a 'clinical job'</th>
<th>Not had a 'clinical job'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Apprentice'</td>
<td>38 (65%)</td>
<td>25 (47%)</td>
</tr>
<tr>
<td>'Student'</td>
<td>5 (9%)</td>
<td>12 (23%)</td>
</tr>
<tr>
<td>'Observer'</td>
<td>13 (23%)</td>
<td>16 (30%)</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>53</td>
</tr>
</tbody>
</table>

There was a sharp difference between the specialties of Medicine and Surgery in terms of students' self-perceptions (cf. Atkinson, 1973). Far fewer of either category of students had apparently felt part of the clinical unit in surgery. There was no difference between 'experienced' and 'inexperienced' students in this respect, however.

Cross-tabulation with other variables on the questionnaire did suggest that there might be some relationships between clinical experience and students' perspectives on careers. In the first place, students who had had hospital jobs were somewhat under-represented among those who had taken an honours year. After the completion of their basic preclinical course, rather than going straight on to the clinical phase, students can interpolate a year to read in one of the medical sciences. After the year they obtain an honours degree in medical sciences.

There was a tendency for students with 'clinical experience' to opt for an honours year less frequently than those without it (see Table 3).

This difference may be attributable to differences in professional orientation among the students concerned. Students who opt for an honours year are more committed to an academic and scientific
Students' experience of work in hospitals

approach to medicine. By and large, the opportunities afforded by work like nursing in hospitals will not be seen as experience in keeping with the student's projected career-path, professional orientation and developing identity as a practitioner of 'scientific' medicine.

When the specific career intentions of students were examined, the area of specialization that they were aiming for also seemed to be relevant to whether students opted for vacation work in hospitals. Students were asked to indicate which specialty they would most like to pursue their career in (to be chosen from a list given to them). The majority of choices were accounted for by three areas of medical specialization: Medicine, Surgery and General Practice. When these 'major' specialties are considered, it appears that in both Medicine and Surgery a very similar proportion—approaching 60%—had taken hospital work. Of those who gave General Practice as their first choice of careers, barely a third had taken clinical work (see Table 4).

It therefore appears probable that the distinction in career orientation does not stop at 'academic' versus 'non-academic' ideologies. A further distinction also needs to be taken into account—that between hospital-based medicine and that practised outside the hospital. Students who see their career progressing outside the hospital service may not see taking a nursing/portering job as such an attractive and valuable proposition.

In general, several students wrote warmly of the general usefulness of such vacation employment and recommended it as a general policy for their fellow students. Again, as one might expect from the comments already quoted, these respondents stressed the insight gained into the social milieu of clinical medicine, e.g.

'I think it would help if all medics at some point saw the other side to hospital life. It might make some of us realize how important nursing care is and it's not beneath any of us—even if daddy is a big consultant!' (Female)

'I am an advocate of the idea that all medical students should do work of this kind—it helps establish more effective relationships with patients and nursing/orderly staff, and gives one more understanding of the patient's predicament and feelings.' (Male)

Discussion

Much writing on the sociology of occupations has stressed the fact that the 'formal' requirements of the curriculum of training do not in themselves prepare a competent practitioner. There are 'hidden curricula' that the learner needs to master in order to pass as a fully credible actor in his work situation. Thus writers have stressed the theme of 'situational learning' in institutions, and 'learning the ropes'. Here the distinction is seen as a contrast between education and practice (cf. Olesen, 1968). The theme is a constant one in research on the health occupations: it is concerned to map 'how medical students become doctors' as well as 'how medical students learn medicine'. (Indeed, I would argue that, to a large extent, the latter concern—the management of medical knowledge in educational settings—has been unwarrantably neglected.)

There are, generally speaking, two ways of looking at social learning in this context, and they are related to the sequence of training and practice. In broad terms, education is followed by work as a certified practitioner. Thus, socialization, role learning, etc., may be accomplished within the institution of formal training (medical school, school of nursing, etc.) or may be acquired subsequently 'on the job'. Thus, with regard to 'post-institutional' socialization, Olesen (1968) comments:

'Graduate health workers, irrespective of schooling or field, come to the work setting as "imperfectly" socialized creatures from at least two standpoints. First, they may or may not have or hold the skills or attitudes idealized, but not fully realized during the formal training period. Second, from the perspective of those in the work setting which receives the new-comers the neophytes may personify fewer desirable attributes or different role skills than the old-timers expect or demand. And finally, in their own eyes new health workers

<table>
<thead>
<tr>
<th>Table 4. Career aspirations and previous job experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would-be surgeons</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Had a 'clinical job'</td>
</tr>
<tr>
<td>Not had a 'clinical job'</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(Indeed, I would argue that, to a large extent, the latter concern—the management of medical knowledge in educational settings—has been unwarrantably neglected.)
may believe themselves less well prepared or socialized than they would like . . . .”

In the same vein, it has been observed of the legal profession:

‘It appears that laymen become lawmen only partly in law school and that the important transformations take place in the hurly-burly of work after graduation.’ (Lortie, 1959)

But what we might call pre-school socialization receives less attention. By this I do not mean so-called anticipatory socialization—the assumption of perspectives and actions prior to, and in expectation of, some future membership of a reference group. Rather, I refer to learning which takes place through practical work before entry to formal training institutions, or phases of formal education. Yet, as I have discussed, a large proportion of the medical students studied had taken advantage of opportunities for such activities, and for participation in health-work settings.

In this respect I want to point up the discontinuity between such pre-institutional socialization and the end-point which is seen in professional practice. The nature of hospital-based work which was open to students—by virtue of their novitiate status—differed sharply from that of qualified doctors, or even of more senior students. As the students themselves depict them, their tasks were essentially menial. As a consequence, their understanding of the situation depended upon drawing contrasts between the present position and their future work. In other words, the relevance of such work does not lie in a simple development of students’ identification with the profession, but in a critical reaction to its members. The theme of trainees’ identification with an occupational group has been over-emphasized at the expense of their rejection of occupational attributes. This may be illustrated by the work of Becker & Carper (1956), which exemplifies the ‘identification’ approach. They comment:

‘New work techniques are presented, and the student is faced with the challenge of mastering them. Thus constrained by the school situation, perhaps with the opportunity to observe his professors making use of these skills, he acquires them and the interests they presuppose and so becomes associated with the particular work identity they symbolize.’

Similarly, they argue that occupational ideologies are acquired through informal interaction between students and teachers:

‘He looks for answers, finds them in the developed professional ideology he becomes aware of in interaction with older students and professors and takes them over for his own use.’

Yet perspectives on work may be generated through disagreement with received wisdom and occupational ideologies. Students may seek out school teaching as a career, not simply through identification with their own mentors, but also in conscious rejection of them and their teaching practices and theories (Cartwright, personal communication). Similarly medical students may attempt to formulate philosophies on their work through rejecting elements of their teachers’ approaches to work. Such divergences are not to be explained or resolved simply by contrasting novitiate’s ‘lay’ perspectives and those held by their elders and betters. Students’ insights are gained through becoming ‘wise’ in places of work, not through naive or mistaken expectations of professional activities. Insofar as students may seek elements of professional ideologies with which they can (actively, not passively) identify, then they may also become aware of competing ideologies and the ‘segmentation’ of the occupation (cf. Bucher & Strauss, 1961). And in the example I have been considering, students’ experiences lead to a set of perspectives on the division of labour between health occupations and the routine forms of interaction between their members.

At the practical level, students’ work experiences appear to be a neglected resource in the teaching of formal curriculum. Thus, for purposes of teaching sociology, even to preclinical students, teachers may be able to draw on students’ own ‘participant observation’ of hospital personnel. Those whom I talked to and who wrote comments for me, appeared well able to reflect upon their observations of ‘under-life’ in the hospital. Their temporary involvement in their jobs and their transitory status placed them in an ideal situation to cast their minds towards the work of doctors (whom they could view as future teachers and colleagues), staff nurses and sisters (whose work they might subsequently collaborate with and direct), and their lowly coworkers (with whom less direct contact might be expected in future). Looking back in their clinical years and taking the role of paramedical workers thus provides
Students' experience of work in hospitals

an exercise in sociological method; the insights into the division of labour, hierarchy, social distance, power and control provide concrete exemplars of sociological work.

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References


CHAPTER 9

In Cold Blood: Bedside Teaching in a Medical School

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Unlike the majority of research presented in this collection, the following paper is not concerned with classroom processes in schools. It is about a branch of higher education – medical education. Rue Bucher has pointed out that:

'I frequently have the impression that students of medicine are second only to freshman psychology students in being objects of study by social scientists' (Bucher, 1970).

I share Bucher's feeling – although one should certainly add school pupils to the list of over-researched captive populations. Medical students tend to be used as research-fodder by their own teachers in the medical school, and by such 'outsiders' as sociologists and psychologists. The extent of such research is partly indicated by the existence of specialist journals on medical education in Britain and the United States. In this country the greater involvement of behavioural scientists in medical schools as a result of the recommendations of the Royal Commission on Medical Education (1968) will no doubt reinforce this trend. But I offer no apology for adding to this research myself. My justification is that teaching processes that lie at the heart of medical education have been almost universally overlooked hitherto. One such lacuna is the topic of bedside teaching – the oldest and least explored method of medical instruction. This paper is an attempt to show one way in which this lack might be remedied.

My own research was done in the Edinburgh medical school. I spent the major part of the academic years 1971/72 and 1972/73 acting as a participant-observer with two cohorts of students in their fourth year of the undergraduate course. I donned a white coat and 'walked the wards' with groups of students and their teachers. The
medical course at Edinburgh follows the traditional pattern in that it is divided into a preclinical period, followed by a phase of clinical studies. It is in the fourth year of the course that formal teaching in clinical subjects begins. Students receive instruction in medicine and surgery in a number of teaching hospitals each morning. Students are attached to a clinical 'firm' for one term at a time. For the first term of the year all students attend medical units; for the second and third terms they spend one term on a second medical unit, and one on a surgical unit. My research was organized in such a way that I spent the first year observing medical teaching, and in the second year transferred my attention to surgical work. In addition to observing the teaching, I also interviewed the students I observed and distributed a questionnaire to the first cohort (cf. Atkinson, 1973). The research was done by taking field-notes, either while the action was going on, or as soon after the action as possible. In addition, I had access to videotape recordings of bedside teaching. These had been made for demonstration purposes, by the Edinburgh University Audio Visual Services. I was able to use these recordings as sensitizing devices before entering the field, and I have also used transcripts of these recordings as illustrative materials.

The time spent in the hospital units is divided between a number of different activities. These include the following types of instructional situations that are recognized by students and staff alike.

Bedside teaching This is the most distinctive aspect of medical education in the hospital. A doctor takes a small group of students into the ward and teaches at a patient's bedside. He may spend all his time with one patient, or conduct a 'round' – teaching on a number of patients in succession. This is an opportunity for a number of topics to be worked on: students practice taking histories and performing physical examinations; physicians and surgeons them-

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1 There is a two-stage entry to the Edinburgh medical school. Students who lack adequate 'A' level passes in the basic sciences enter in the first year; those with the necessary exemptions enter into the second year directly. Thus after one year of basic science and two years of medical sciences, clinical work begins in the fourth year, which is the third year of study for many of the students.

2 For the second and third terms the class is divided into two and the halves rotate – whilst one is doing medicine, the other is doing surgery.

3 I am extremely grateful to the Edinburgh University Audio Visual Services for the preparation of a tape of the sound-track. I am also indebted to the consultants concerned for their permission to make use of this material; they must of course remain anonymous.
selves demonstrate these skills to the students; the individual patient may also be used as a starting-point for more general discussion of pathology, treatment, clinical method and so on.

_Tutorials_ Each clinical unit has a teaching room attached. Here doctors may conduct small group teaching sessions of a more 'theoretical' or 'didactic' nature, without recourse to patients in the wards. (The teaching room may also be used for the discussion of points that arise at the bedside, or to avoid discussing features of the case within earshot of the patient himself. These latter activities are usually seen as extensions of 'bedside teaching' sessions rather than 'tutorials'.)

_Waiting nights_ The hospital wards receive emergency admissions on a rota basis. On their weekly 'receiving' or 'waiting' night, students attached to a given unit are expected to attend for the evening. They can thus see patients brought in in acute conditions.

Students in both medicine and surgery also attend out-patient clinics. In surgery they visit operating theatres and observe, either from a gallery or from the theatre floor. These, then, are the main forms of clinical instruction that students are engaged in during their fourth year medicine and surgery. In the following discussion I shall be concentrating on aspects of the bedside teaching encounter.

As I have already suggested, in observing bedside teaching, I found that I was venturing into relatively uncharted territory. The topic has received scant attention from most writers on medical education. As in many areas of educational research, concern has been first and foremost on methods of selection, assessment, attainment and failure, motivation, attitudes and career aspirations. In contrast, the process of face-to-face teaching has been poorly covered. (The relative stress on different research areas is well illustrated by reference to a recent survey of the relevant literature (Simpson, 1972) where the lack of research on clinical instruction is shown up quite strikingly.)

In the sociological sphere there are three major works on medical schools - all American. Firstly, there is the study of Cornell and Pennsylvania undertaken by Merton and his colleagues from Columbia (Merton et al., 1957). This was followed by the ethnography of Kansas University medical school by Hughes and his
Chicago-based colleagues (Becker et al., 1961). These have recently been supplemented by Bloom's account of the State University of New York Downstate Medical Center (Bloom, 1973). It is not necessary to review the differing approaches of these works in this context (see Atkinson, 1973, for a discussion of the relevance of these studies to the Edinburgh study). It is sufficient to point out that none of them contains any adequate description or analysis of the processes of clinical teaching. They all stop short at discussing students' attitudes to patients; their interaction with them is almost entirely by-passed. In Britain we do not as yet have any parallel studies of medical schools. The largest single piece of published research on medical students in this country derives from a survey undertaken jointly by the Association for the Study of Medical Education and the National Foundation for Educational Research. This was done in connection with the Royal Commission on Medical Education (1968) - The Todd Report - and some of the data are published in an appendix to the report. This was entirely conducted by means of a questionnaire, and thus presents no direct evidence on teaching interactions. The main text of the Royal Commission has little to say on the topic of clinical instruction; it deprecates the use of large ward rounds, and commends consideration for the patients, but adds little else.

If the main sociological sources have ignored the topic, it has to some extent been approached by those who are more closely aligned with the tradition of social psychology and so-called 'interaction analysis'. There have been a number of attempts to apply the techniques of pre-coded observation schedules to the observation of bedside teaching. I am aware of three methods that have been tried — all stemming from the United States. There is one summary rating-scale system and two varieties of category system.¹

The rating scale system that I refer to is the Medical Instruction Observation Record — developed by Hilliard Jason at the University of Buffalo and subsequently used in a number of settings (e.g., Jason, 1962, 1964). The system consists of eight separate scales, each with twenty points. The scales are labelled: 'Attitude to difference'; 'Sensitivity to physical setting'; 'Attitude to students'; 'Use of instructional materials'; 'Attitude to patients'; 'Reaction to students' needs'; 'Use of teaching methods'; 'Use of challenge'.

¹I have not attempted to summarize the findings of the studies mentioned; I am concerned solely with an evaluation of their adequacy from the point of view of method.
Jason (1964) claims that in the use of his scales, 'the observations were purely descriptive and were not concerned with the quality of the teaching'. Yet it is hard to see how such ratings can be seen as anything but frankly evaluative. Consider, for instance, the exemplars that are offered in the user's manual to illustrate the extreme poles of one scale - 'Attitude to patients'. On the one hand we find: 'Frank disregard for the patient is evident. The patient is not greeted, is given brusque instructions, and manipulations are undertaken without explanation.' On the other hand there is: 'Kindness and consideration characterize the contact. Permission is requested for all that is done; reassuring explanations are offered and protection of modesty is assured.' It is, it appears to me, difficult to maintain that the evaluative stance is even an implicit one here.

As will be apparent from the wording of the scale titles, Jason's system is concerned only with the evaluation of the medical teacher; students and patients enter into the picture only as incidentals to the clinician's performance. In common with other rating summaries, Mm is extremely wasteful, insofar as it preserves none of the original interactions. The Mm does preserve an underlying concern apparent in much of the American tradition of classroom interaction research, stemming from the work of Lewin, Lippitt and White (1939). This line of research is concerned with the theme of democracy and authoritarianism (or, as Jason labels it, traditionalism). Explicitly, underlying his scales, he sees a single bipolar dimension:

'... for the seven scales, they tended toward the extremes of: rejecting student differences, disregarding the physical setting, showing an antagonistic attitude to students, using instructional materials ineffectively, disregarding student needs, employing teaching methods ineffectively and making no use of challenge. Henceforth, for summary purposes, teaching that tended in these directions is referred to as "traditional" (Jason, 1962).

By the same token, instructors who tended towards the opposite extremes were described as 'democratic'. The use of such value-laden descriptions severely undermines Jason's claim to a non-evaluative position. Indeed, one is tempted to suggest that he comes
out into the open and describes the first type as downright un-American teaching activities.

At first sight more promising than the more are the two interaction schedules of the category type. The first that I shall consider is that used by Payson and Barchas (1965) in what they describe as 'a time study of medical teaching rounds'. The analysis proceeds by monitoring the allocation of time to a number of different activities, classified according to whether they take place with the patient present or absent. The categories for coding are as follows:

**Patient present**
- Talk with patient – (a) physical factors
  - (b) other factors
- Examination [of the patient]
- Talk about patient – (a) physical factors
  - (b) other factors
- Theory

**Patient absent**
- Talk about patient – (a) physical factors
  - (b) other factors
- Theory
- Walking and waiting
- Miscellaneous

When one remembers that 'patient present'/ 'patient absent' represent two different social contexts in which the instrument is used, it will be seen that the schedule is based on five categories of talk and one of action, plus two residual categories. It is a very blunt instrument indeed. Additionally, the mixture of action and talk involves an inherent ambiguity in the recording. All the time devoted to the examination of the patient is allocated to that category; any talk – either with the patient or the students on the part of the doctor – is not recorded as such.

The system used by Payson and Barchas shares a basic problem with the more in that it is used to record only the talk and activity of the teaching clinician:

'The same procedure was used in each hospital. The allocation of discussion and examination time of the senior
physician present was measured with a stopwatch and recorded according to a pre-coded schema... All use of time was considered to be under the direction of the senior physician and was so recorded' (Payson and Barchas, 1965).

Thus, quite apart from the failure to distinguish the talk and acts of patients and students, the use of the scheme makes a very extreme assumption about the nature of social order in the teaching situation— that it is solely under the control and management of just one of the interacting parties.

More sophisticated is the third coding scheme to be considered. This bears closer resemblance to the most frequently used methods of classroom observation. Anderson (1966) developed Flanders' (1955) category system (FiAC) for use in clinical settings. The scheme consists of ten major categories, of which several are subdivided— producing twenty-one categories in all. Additionally, there are three residual categories— 'Silence', 'Confusion' and 'Patient talk'. As with FiAC, the underlying logic of the system is the four-way classification of talk into 'Instructor initiation', 'Instructor response', 'Student initiation' and 'Student response'. Strikingly, patient talk does not figure in the subsequent analysis. In fact, Anderson's study appears to be addressed primarily to what my Edinburgh students would have recognized as 'tutorials' in the teaching room. Although he states that ward rounds were included in the analysis, it seems that these were primarily classroom-based sessions, with just occasional forays into the ward to the patient's bedside.

Yet even Anderson's approach leaves much to be desired, and my criticisms apply a fortiori to the other two systems I have referred to. As I have already pointed out, students' and patients' contributions to the teaching session are not dealt with in the FiAC, nor by Payson and Barchas. The Anderson system does include categories for both, but the patient's talk is treated as a residual category, and does not play a significant part in Anderson's description of teaching practices. In other words, Anderson treats the process of clinical teaching as essentially similar to that of school-based classroom teaching. (Indeed, his description of his own work explicitly describes it as classroom-based although it purports to include ward-based bedside teaching.) Thus the design and use of
Anderson's system leave matters very close to the classic Flanders model of two-party games of 'linguistic ping-pong' (Hamilton and Delamont, 1974). In doing so, I argue, Anderson (and the other authors cited) have managed to distort the most distinctive feature of clinical teaching at the patient's bedside— that it is a triadic situation. The doctor, students and patient are all engaged in the creation and maintenance of the social situation. Further, they are all engaged in the exchange and control of medical information and knowledge. The patient can in no sense be treated as a lay figure, a passive 'resource' or 'topic' for teaching; he or she is also called upon to act as a participant— as a social actor. Any approach which failed to accommodate the part played by all parties to the interaction cannot cope adequately with the distinctive and recurrent features of bedside teaching in the medical school.

My solution does not lie in the development of yet another pre-coded observation system, however. Despite the pre-eminence of a few systems such as the FIAE, educational research has been inundated with a vast number of observation systems. But, apart from the establishment of a few norms— such as Flanders' 'two-thirds rule', the development of adequate generalizations about teaching has eluded the interaction analysts. Interaction analysis may prove useful for a limited range of practical problems (cf. Hamilton and Delamont, 1974, for a discussion of pros and cons). It does not attempt to solve fundamental problems of social order. Rather, this style of research is primarily concerned with the enumeration of surface features of the interactions. Or, to put it more crudely, the level of analysis is 'etic' rather than 'emic'— with the proviso that the 'etic' descriptions are generally very crudely drawn. Essentially, the interaction analysts are involved in the production of classifications and building typologies (e.g. of 'teaching styles'). Yet the criteria which inform the selection of the descriptive categories remain largely implicit (cf. Hamilton and Delamont, 1974). The construction and use of such schemes is

1This 'rule'— that approximately two-thirds of time in classrooms is devoted to talk, and two-thirds of that is taken up with teacher talk (Flanders, 1970)— is not a 'rule' of discourse, but a statistical norm or trend. This is in contrast to, say, the rules of conversation derived by Sacks (forthcoming)— for instance, that 'at least, and not more than, one party speaks at a time in a single conversation' and 'speaker change recurs'.

2The contrast between 'emic' and 'etic' in this context is taken from Walker and Adelman (n.d.). The distinction was originally formulated by Pike (1954).
dependent upon knowledge and assumptions about the social realities of classroom life which remain unexamined. Interaction analysis is afflicted with 'quantiphrenia'—with the belief that classification and enumeration can replace the process of generalization in generating theory. All too often, the failures of interaction analysis are couched in terms of pious hopes for the future: 'We are not yet in a position to...'; 'We hope that future research will clarify...'. The assumption appears to be that if you count enough things for long enough, then theory will somehow emerge.

Although the approach of interaction analysis relies on the quantification of phenomena, there appears to be no valid basis for the assumption that the repetition or duration of events provides the only ground of social order, or provides the only rationale of members' understandings of social interaction. Of course, the sense of repetition of typified acts may be a part of one member's typification of another: 'Oh, he's always ...'; 'He's forever saying ...' and so on. But such assemblages of 'similar' events are the products of members' interpretations on concrete situations. They are not once-for-all classifications which can be abstracted from the members' formulations. Additionally, members may recognize as the most important element in an interaction an act which is seen as atypical, unique, unforeseen, unrepeatable or whatever. What the students see as the most salient feature of a teaching period may well be fleeting—lasting perhaps a few seconds—yet prove a crucial event in the students' shared definitions and understandings. (For such an event and its subsequent significance, compare Walker and Adelman, forthcoming.) Let me also cite an example from my own research. The incident concerns a relatively young consultant in medicine. In the middle of teaching one day he suddenly groaned and 'collapsed'. Dumbfounded, the students stood about, wondering what to do—and in fact doing nothing. After a moment or two, the consultant leaped back to his feet and berated the students for standing around and taking no action. They were supposed to be training to be doctors—but what good would they have been if he had genuinely collapsed? This incident clearly had a considerable effect on the students, and was entered into their word-hoard of myths and folk-tales about their teachers. He was seen as a 'charac-

1This point is also made by Leach (1961), who castigates his fellow anthropologists for 'butterfly collecting' in the construction of their typologies rather than searching for general structural properties.
ter', who was often described to me as illustrating his teaching with such 'dramatic' antics. For myself and the students alike, the incident recounted above appeared to be a prime example of an extremely characteristic facet of this clinician's teaching. Yet it lasted a few moments only, and would probably have occupied about ten tallies of a Flanders/Anderson three-second sampling technique. (Presumably, in Flanders it would be represented by category 10—'silence or confusion' followed by 7—'criticizing or justifying authority'; similarly, Anderson would represent it as 7 followed by 6b.) Even stated in baldest outline, the doctor's action and the students' reaction suggest a number of comments on clinical teaching and professional values. I am not convinced that such comments are in any way retrievable from 'Silence or confusion followed by criticism'.

My own method derives rather from an ethnographic stance. Instead of assuming an understanding of social order in clinical teaching, I take it as problematic to account for how such social encounters are successfully accomplished by the members involved. (See Hamilton and Delamont, 1974, for a discussion of some of the main contrasts between this style of research and interaction analysis.) My analysis is influenced by Erving Goffman's accounts of everyday life (e.g., Goffman, 1961, 1967); in particular, I follow the game-theoretic approach advocated by Lyman and Scott (1970), and derived from some of the ideas of Goffman.

In criticizing the previous research I referred to, I pointed out that they failed to take account of the most distinctive aspect of clinical teaching — that it is a three-party game. The usual teacher-student model must be broadened, as the most important 'teaching resource' is also a participant. Locating this weakness also suggests a possible approach to the study of clinical teaching. In the rest of this paper we shall concentrate on work done by the patient in the construction of the bedside teaching encounter.

One way of approaching the social construction of reality —

1Hamilton and Delamont (1974) and Parlett and Hamilton (1972) use the term 'anthropological'. I prefer 'ethnographic' instead as it refers primarily to method, whereas 'anthropological' carries stronger connotations of subject matter which are inappropriate.

2This is of course an over-simplification. There is not a single student, but several round the bedside. Sometimes individual students are chosen to talk with the patient, while on other occasions, students ask questions and comment in rotation. The problems of how individual students' utterances are 'tied' to each other to produce a single history are beyond the scope of this paper.
though by no means the only way—is through an analysis of events which disrupt it. Such an approach has been used to good effect by Garfinkel (1967). Such disruptions of everyday life make visible the taken-for-granted background features of social life which may normally pass unnoticed. When things go wrong, we may get some leverage on the ways in which events are normally managed, and how actors routinely produce smooth, untroubled interactions. Disruptions may be deliberately contrived (as with Garfinkel's illustrative exercises) or may be naturally occurring episodes in ongoing encounters.

In adopting this starting point, I shall use a type of naturally occurring action which can disrupt, or spoil a bedside interaction between students and patients (with or without a clinician present). To begin with, I shall present a summary of the event which first drew my attention to this specific line of inquiry. I was standing with a small group of students who had been taking histories from patients, either individually or in pairs. As we hung about in the corridor, we were joined by one of the female students. When she came up, she immediately began to complain about 'her' patient: as she had begun to take the patient's history, the patient had immediately told her that she had mitral stenosis, as a complication of rheumatic fever contracted in adolescence. She had, the student complained, 'spoiled all the fun'. This episode, and its connotations of a spoiled encounter, gave me an entree into the problem of social order at the bedside. The feature which emerges in this context is the diagnosed nature of the patient's illness. By the time that students see the majority of patients in the course of morning teaching rounds, their trouble has been at least differentially diagnosed, and the diagnosis may in fact be considered definitive by the hospital clinicians. At least management of some sort will have been initiated, tests ordered, procedures undertaken. Symptoms such as severe pain will have been controlled if possible, and physical signs may have abated or disappeared altogether (e.g., high fevers, blood loss, etc.). This aspect of the teaching round is recognized by students. They contrast it with cases that they see on waiting nights. In student jargon, the distinction was sometimes characterized as a difference between 'hot' and 'cold' medicine. On the one hand, 'hot' medicine was seen as exposing the students to 'real' medical situations: histories are being taken for the first time and are crucial to the patient's treatment; the illness must be managed and
diagnosis must be attempted. There is a sense of the dramatic, the unpredictable, and the rough-and-tumble of acute hospital medicine. On the other hand, 'cold' medicine is seen and characterized as 'contrived' situations.

Although a history may have been elicited from the patient a number of times already, students may be asked to take a history from the same patient yet again. For example:

'Mr I said at one point, "Half the students here have seen me before, and my history is as big as that..." He held his hands apart to indicate a thick pile of notes.'

'The patient interjected that she had told her story so often that "I should have brought along a tape-recording".'

This feature of bedside teaching was also recognized by members of staff. For example, in the introductory talks at the beginning of the year I noted the following:

'Dr M. commented that they might experience a natural feeling of depression on seeing a patient who had already been thoroughly examined, and of thus being an imposition on the patient.'

It was sometimes stated by clinicians that it was always a possibility that new information might be thrown up in the course of bedside teaching, which might affect the management of the patient and his illness. But my observations suggest that this is in fact a very rare occurrence; such new observations as are made, or discrepancies which appear, are not usually of importance in the management of the case.

To summarize this point, then: the patient's hospital career is already under way. It follows from this that: the patient may have become well-informed on the nature of his or her condition. It is by no means the case that all hospital patients are well-informed. On the contrary, some are systematically denied accurate knowledge of it (cf. Glaser and Strauss, 1965; McIntosh, 1974). Nevertheless, insofar as clinical work, including diagnosis and investigations, has been done, patients may be in a favourable position to be aware of what has been said and done. Additionally, there may be patients...
who, by reason of long and/or unusual disorders, have come to occupy a position, vis-a-vis the doctors which approximates more to that of 'colleague' than 'client'. Such a relationship is described by Fox (1959) – in the context of experimental academic medicine, where the patients' cooperation and self-monitoring made them indispensable members of the research enterprise.

Additionally, the teaching rounds that I am describing were specially scheduled teaching occasions. The students were not simply taken on to the physicians' working rounds. They were specifically teaching rounds, with a single clinician and a group of students. (This is in contrast to the traditional stereotype of students straggling along behind a grand round, with consultant, junior doctors, ward sister, nurse, senior students and so on – the sort of thing immortalized in Doctor in the House.) To put it another way, and to take up my earlier point: the bedside teaching situation is not therapeutic in nature.

These features that I have outlined begin to define the nature of 'cold' medicine. It is a 'mock up' situation (cf. Garfinkel and Sacks, 1970). Although differing from it in a number of respects, it is one purpose of the 'cold' encounter to produce something which, at least in part, simulates the supposed reality of 'hot' medicine. Hence, if it is to be brought off successfully by the participants, the previously acquired knowledge – on the part of the patient and the doctors – may have to be suppressed or at least managed with care, in the course of the teaching encounter. Thus, to echo the previous incident, if a patient, in reply to a student's initial question of 'What was it that brought you into hospital?', should reply 'Thyrotoxicosis', instead of offering a lay account of the symptoms, then the reality of the diagnostic exercise will be difficult to sustain. In other words, in negotiating the reality of the bedside teaching situation, both teacher and patient may well have control over an important resource. That is, they may both be well informed as to the nature of the patient's illness. Even if the patient is not accurately informed of the diagnosis as such, he or she may be aware of crucial events in the patient's career that could 'give everything away', that the students could pick up as clues which by-pass the diagnostic process. Most research has tended to emphasize patients' lack of understanding rather than their potential mastery over such resources. But my approach is not necessarily antithetical to such a view: it makes little difference whether my hypothetical patient
understands the clinical import of 'thyrotoxicosis'; it is sufficient that the term be known and can be divulged.1

It is therefore a concern in the construction of these encounters that patients and doctors should engage in monitoring the flow of information. They need to attend the problem of what may be told and when. This can be illustrated in the following extracts from my field notes.

'The students had been told to examine the patient's precordium, one by one. As the first student began, the registrar came back and poked his head through the curtains to see if everything was O.K.

PATIENT: Doctor, do I tell what's wrong?
DOCTOR: Under no circumstances. If they ask you what's wrong, ask them their names and I'll come back and find out who they were.

PATIENT: It's just that the other day I was told not to tell, but I slipped . . .'

'A girl student was exploring whether the patient (an elderly lady) had any signs of anaemia. As she was examining her eyes, the inside of her mouth, the creases in her palms etc., the old lady chipped in, “I’ve had a blood transfusion since I came in . . .”
The doctor interrupted, “Don’t tell them too much. You’re giving the whole show away—giving away the whole shooting match!”
The old lady clapped a hand over her mouth.'

These two extracts illustrate how, on occasion, patients and doctors may engage in metacommunication. That is, talk-about-talk; in this context talk about what may be divulged to the students. Such talk-about-talk serves to articulate the rules of the game. It provides a running commentary whereby the content of the talk is allocated to the speakers.

The shared knowledge at the disposal of the patient and the doctor

'It must be emphasized that by no means all patients are in the position of being 'well-informed'. But in stressing the accomplishment of bedside teaching sessions with such patients I do not wish to imply that work with 'uninformed' patients does not also require management. To cite one obvious example, patients may have been deliberately kept from knowledge about their condition and prognosis—e.g., where the illness is terminal (cf. Glaser and Strauss, 1965). Teaching encounters may need to be carefully managed by students and staff in order to preserve such a state of 'closed awareness'.

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may therefore enable them to enter into a conspiracy of silence—to suppress information. On the other hand, their shared knowledge may also provide a base on which information may be artfully divulged—again, in a way which provides for the successful accomplishment of a diagnostic exercise. Let me exemplify this with some extracts from a transcript of one of the videotape recordings I mentioned.

One of the students had begun to take a history from the patient. After a few minutes of question-and-answer, the consultant broke in:

CONSULTANT: Okay, fair enough. Now I would like you, in turn, to ask relevant questions—one question each—trying to get further into his history. And I think it is only fair to say that so far you have not elicited all the main symptoms. What other questions are you going to ask? You know, this is not the diffuse interrogation of what we have now got.

We can see how the previously accomplished diagnostic work informs these comments. The consultant’s advice that there is still a symptom to be drawn from the patient implies some already established list of symptoms. This is available as a topic by virtue of the fact that the physician himself has already taken a history, or has a history available in the patient’s folder of case-notes.

Despite the fact that the consultant had offered this guide to the students’ talk, the elusive further symptom was not forthcoming. The consultant turned to prompting the patient:

STUDENT: Is there anything else that you feel—symptoms that you get with this pain?

PATIENT: No, it’s just the pain I feel. That’s all, nothing else.

CONSULTANT: Is that actually strictly true? You know, is there anything—I think the question really is—is there anything which is happening recently?

PATIENT: Well, apart from the pain I seem to have been drinking, likes of water, milk, things like that. Because of this, I seem to go to the toilet a lot more than I used to...

Here the consultant orients the patient to the possibility that there is additional information that they both know of—his further
symptom. The consultant’s metacommunica
tional work now indicates to the patient that this information may now be divulged
legitimately. He reformulates the question, by re-phrasing it in
terms of recent events, rather than additional symptoms, in such a
way that it can be heard by the patient as an appropriate request to
be answered, in terms of the patient’s recent feelings of thirst.

In the first extract from this encounter, the consultant addresses
the students; it becomes their responsibility to try to elicit the
additional information for themselves. They continue the ques-
tioning but apparently fail. The consultant then takes a hand once
more, and in the second extract the onus is shifted to the patient.
In each case the consultant’s teaching task involves formulating the
pattern of information-seeking, and the uncovering of legitimate
information about the patient.

Talk-about-talk is a constant feature of everyday discourse.
Stubbs (forthcoming) argues that it is a particularly important
feature of teachers’ talk. It is therefore not particularly noteworthy
that it should appear in this context at the bedside. What I want
to draw attention to, however, is the specific work that is being done
through the talk here: it is the management of knowledge between
three parties. And it is this which is the peculiar attribute of bedside
teaching.

The framework within such interactions take place can be
described as an ‘information game’. An information game is one of
a number of analytic devices which can be applied to the study of
everyday interactions and which derive from the work of
Goffman. A number of such devices have been codified by Lyman
and Scott (1970). They define these as: face games; relationship
games; exploitation games; information games. Face games are
those ‘which involve preventing damage to one’s own or another’s
identity or the salvaging of honour when it has been impugned’
(cf. Goffman, 1955). In relationship games the interacting parties
are concerned to manage their self-presentations in such a way as
to increase or decrease their social distance. Exploitation games
occur when parties seek to achieve the compliance of others.
Lyman and Scott define information games in this way:

‘Information games arise whenever one actor wishes to
uncover information from another who wishes to conceal
it.’ (p. 58)
It must be emphasized that such descriptions are analytic abstractions; they are not intended to provide total characterizations of interactions. Such games may operate simultaneously, be overlapping and interdependent. For some purposes, however, they may be treated separately. The notion of an information game has been applied in a particularly telling way in Scott's ethnography of race track punters and their attempts to discover 'tips' and reliable information concerning the runners. Similarly, it can be brought into play when blacks pass for white, when homosexuals pass for straight and so on. They seek to ensure that information and aspects of their identities remain undisclosed. In the same way, in Scott's work on horse-racing, just as punters seek to uncover information, so owners, trainers and jockeys may be involved in covering up the information that the betting man seeks. In the case of the bedside teaching session, what is at stake is not so much that information should remain undisclosed, but rather that it should appear in the appropriate manner and at the appropriate time. It is not the purpose that it should be hidden that our patient has thyrotoxicosis, but rather that such information should be established and validated through the application of the principles of history taking and diagnosis. It is necessary that the parties 'go through the motions'. The information game serves to ensure that an orderly transfer of information occurs in accordance with the rules of clinical procedure.

In the course of information games, the parties become involved in sequences of moves aimed at the management and control of information. Thus one may initiate covering moves when he becomes aware that knowledge is being sought which he himself wishes should remain private. In some varieties of encounter such covering moves will imply surreptitious work, the erection of false fronts, trailing red herrings or whatever. In the context of the bedside encounter, such covering may take a more straightforward form—questions and answers being ruled out of court as contravening the conventions of the diagnostic exercise. The bedside interaction is openly defined as an information-seeking situation, and to that extent, the frank vetoing of lines of inquiry are appropriate moves. Similarly, when the smooth progress of the history and diagnosis is at stake, uncovering moves may be brought into play. As I have pointed out, it is not the case that information should be permanently irretrievable, but should come into the open at the right time.
Information which is not forthcoming may be prompted—its divulgence may be declared legitimate and its appearance facilitated.

In the triadic situation that I have sketched, the major work of information management is the task of the teaching doctor. On the basis of his previously acquired information about the patient, he is in a position to monitor the flow and disclosure of information. Thus, rather differently from the two-party information game, it is not the questioner alone who makes uncovering moves, nor the respondent who seeks to cover. The third party is in a position to interject such items into the talk and thus to 'cue in' the other parties to their place in the game.

The discussion may appear to have taken us some way from the observation of teaching—and particularly far from considerations of research in school classrooms. In one sense this is deliberate. I believe that there is a danger in pursuing ‘classroom’ (or similar) research of assuming that the locale of the research provides a rationale and justification for the work which is done. But because educational research has begun to move nearer to ‘where the action is’, that does not guarantee that we shall necessarily understand what the action is. Having opened up the classroom and stepped inside, we should not always confine our attention to that small world. Theories which emerge from classroom research should draw on the observation of everyday life in other settings as well. Hence, the problems of race-goers, homosexuals and so on may be fruitfully inspected for parallels, contrasts and insights.

On the other hand, the issues that I have briefly raised are not without direct application to school-based teaching. Arguably, like the bedside situation, the ‘guided discovery’ approach in contemporary teaching practices depends on a ‘mock up’. For instance, in the arena of science teaching, students’ work and ‘experiments’ are designed to produce a workable account of ‘real’ science. Yet the successful accomplishment such a mock-up may depend on a degree of stage-management on the part of the teacher (cf. Delamont, 1973). Again, at a more general level, there is the situation of mutual pretence involved when teachers ask ‘questions’, when it is apparent that the answer is already well known (cf. Stubbs, this vol.). This clearly resonates with the bedside material I have presented above. The maintenance of reality based on the principle of discounting, suppressing or covering previously acquired
knowledge may turn out to be a fundamental feature of instructional situations. Bedside teaching encounters may be, after all, less idiosyncratic than they first appear.

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References
I

We propose to discuss two varieties of educational practice which, in rather similar ways, stress the first-hand 'experience' of the student in the process of learning. We wish to strike a recondite harmony between two learning situations which at first glance may appear quite diverse. The two situations we consider are guided-discovery science at secondary school level, and the bedside teaching of medicine in medical school. The examination of these two areas derives from our own 'experience' as researchers. The paper is based upon research in an independent Scottish girls' school 'St Luke's' (Delamont, 1973) and in the Edinburgh medical school (Atkinson, 1975). In discussing these two, apparently disparate, types of educational experience, we have been struck by a number of parallels; here we shall attempt to draw out some of these common themes, and to set them in a theoretical framework.

The curriculum development movement of the 1960s produced what purported to be a new way of learning at secondary level. Instead of the pupils being the passive recipients of lectures, or participating in drill-and-practice sessions, the new curricula posited a different relationship between teacher and taught, and a different mode of learning. Such new curricula as the Nuffield Science developments, or the Schools Council Humanities Curriculum Project attempted to take away from the teacher what had hitherto been her primary role — imparting knowledge. Rather than the teacher delivering _ex cathedra_ statements of fact, the new curricula envisaged that the pupils should retrieve information from a range of resources provided for them.

The teacher's role was to be modified to a cross between just one more resource, a 'counsellor-and-friend', or a neutral chairperson.

Such an approach was central to the ideology which informed changes in science curricula. In the development and implementation of 'Nuffield Science', it was a major principle that pupils should conduct experiments, analyse the results and draw conclusions from them. Whilst teachers would still demonstrate experiments and so on, far greater stress was to be placed on the pupil's _discovery_ of the nature
of things. The rationale of the new approaches had been articulated by Henry Armstrong at the turn of the century, with his advocacy of 'heuristic' approaches to science education:

'Heuristic methods of teaching are methods which involve our placing students as far as possible in the attitude of the discoverer — methods which involve their finding out, instead of being merely told about things. It should not be necessary to justify such a policy in education... Discovery and invention are divine prerogatives, in some degree granted to all, meet for daily usage... it is consequently of importance that we be taught the rules of the game of discovery and learn to play it skilfully. The value of mere knowledge is immensely over-rated, and its possession over-praised and over-rewarded.' (Armstrong, 1898)

The new approaches should therefore stress pupils' engagement in 'real' experimentation and 'real' discovery, rather than the empty, unrealistic recapitulation of classic demonstrations. It was, therefore, hoped that such new curricula would involve the teachers and pupils in the joint production of something that was taken to be much more like the work of 'real' science. The authors of the Science Teacher Education Project (1974) make this orientation explicit:

For many of the teachers who were involved in the curriculum projects of the 'sixties and 'seventies it was in the hope of giving pupils an experience of the process of being a scientist. (p.63)

Thus the activities of science education were to become more like the real-world activities of professional scientists (or rather, what were taken to be their activities). In this way the natural phenomena with which students worked would also become more 'real'. This aspect of the new science was encapsulated in the survey of teaching practices undertaken by Kerr et al. (1963). Although this study was done before the new curricula were in full swing, it does touch on important aspects of the emergent style of thought. The researchers produced a series of statements about practical work in school science, one of which was:

To make biological, chemical and physical phenomena more real through actual experience. Practical work can improve appreciation of basic phenomena by providing opportunities for contact with
actual equipment and processes. It is the reality of the experience with the actual thing that influences so much the level of understanding.

By virtue of these developments, pupils should learn to ‘think scientifically’ – that is, to design experiments, perform them and draw appropriate conclusions from their observations. Emphasis was to be placed on ‘ways of knowing’ rather than on the retention of ‘facts’. This approach comes across clearly in the Scottish Integrated Science Scheme discussed by Hamilton (1975). The official documentation associated with the scheme — known as Curriculum Paper Seven — recommends, *inter alia*, that:

*The discovery method should be used wherever possible.*

(Recommendation 5)

*A much reduced emphasis on the retention of the factual content of the syllabus. Instead...pupils should be exposed to many other aspects of the work of the scientist...the experimental processes of thought by which he arrives at his conclusions and the language which he uses to communicate these conclusions to others.*

(Paragraph 8)

These recommendations and the ideology of the ‘new’ science were therefore shot through with these related themes: the importance of pupils’ personal experience; the methods of discovery; the reality of science: the reality of natural phenomena. We shall go on to examine some aspects of how such approaches are worked out in classroom practice. At this point, we turn aside to consider our second type of instructional system.

While the science teaching we have outlined was innovatory, the system of medical teaching we discuss is a time-honoured one. But just as the science teaching was to bring ‘learning’ and ‘practice’ more into line, so it can be seen as analogous to the traditional methods of ‘on-the-job’ training characteristic of the ‘clinical’ phase of professional education. Such educational practices as clinical teaching on the hospital wards also stress the students’ exposure to the ‘real’ work of the hospital: emphasis is placed on the student’s own first-hand ‘experience’ in accumulating practical knowledge. This is emphasised in the classic study of the University of Kansas Medical School (Becker *et al.*, 1961), where the notion of ‘clinical experience’ is used...
by staff and students alike to justify the importance of the student's first-hand involvement in work with the patients in the teaching hospital. Just as the science curricula we commented on contrasted pupils' experience and discovery with the rote-learning of 'facts', so the medical approach contrasts clinical experience with the pronouncements of textbooks (to the detriment of the latter). Whilst students chafe at learning the preclinical sciences (such as Anatomy, Physiology and Biochemistry), they greet their entry into the teaching hospitals as marking a move towards the 'real work' of medicine. They are taught by practising clinicians and come into contact with real patients. Just as the science curricula are predicated on 'discovery', a similar concern informs much of the medical teaching: in this context, the students are often required to 'discover' the correct diagnosis by questioning the patient (taking a history) and examining his body. Indeed, this is the basic objective of clinical teaching in its early stages; considerations of management and treatment of patients tend to come in a little later.

We shall go on to discuss the nature of the 'reality' which is produced and reproduced in the two educational contexts.

II

Although it has changed somewhat in recent years, the underlying rationale of clinical teaching in medicine has remained largely unaltered since the eighteenth century. At root, the method stems from the apprenticeship approach to medical training whereby students learn 'on the job'. Students who are in the clinical phase of their course of study are attached to clinical units ('firms') and receive instruction from the doctors in the hospital wards, out-patient clinics, operating theatres and so on. The traditional view of this activity is that presented in Richard Gordon's *Doctor in the House* — where students tag along behind the consultant on his grand ward round: they shuffle along behind the entourage of junior doctors, ward sister, nurses and senior students. The doctor examines his patients, occasionally throwing scraps of information to the students or pausing to fire questions at them. Such a popular view is not entirely inaccurate: as Cramond (1973) remarks, the most notable aspect of *Doctor in the House* is its universality. However, the contemporary approach is somewhat different. Whereas in the past, students were often attached to working rounds in this way, the Edinburgh teaching rounds described here were specifically scheduled as teaching rounds, pure and simple and consisted of just one clinician
and a group of students, without any other courtiers or hangers-on. Thus the bedside teaching sessions did not form part of the management of the patient by the hospital staff: it was not a therapeutic situation. Thus the routine patient-care done by hospital personnel and the teaching of junior students did not overlap.

This bedside teaching is in sharp contrast to another situation to which students are exposed in the hospital. These occasions are known as waiting nights. The hospital wards receive emergency patients on a rota basis, and on their weekly 'waiting night' (or 'receiving night'), students who are attached to the ward are expected to come in and attend for at least part of the evening. On such occasions the students can observe the patients as they are admitted in acute conditions. They see people come in with 'acute abdomens', or in the critical phase of a heart attack: they see hospital cases when they are 'fresh'. If the patients are up to it, students may go and take a history from those newly admitted and examine them. Alternatively they may merely observe while the admitting clinician works on the patient himself, and offers a running commentary on what he is doing. In surgical units these occasions provide the students with much-prized opportunities to go into the operating theatres where they can observe things like emergency appendicectomies — or even assist at such operations. Thus waiting nights — and the sort of experience they provide for the students — can be contrasted with the teaching rounds that are routinely conducted during the day. In the former context, the students are present while the 'real' work of the hospital is going on (and it would go on even if they were not present). Teaching rounds, on the other hand, are clearly separate from the hospital's routine work with the patients — and the students are their sole raison d'être.

The students recognise the distinction between these two varieties of teaching situation. Whilst they do not always employ the vocabulary, they occasionally label the distinction as one between 'hot' and 'cold' medicine. It is often applied to types of surgery: 'hot' surgery is that concerned with intervention in life-threatening crises, whereas 'cold' surgery covers the elective surgery for conditions like hernias, haemorrhoids and the like. It has also been employed in the arena of medical education by the authors of the Royal College of General Practitioners' report, The Future General Practitioner. They distinguish between two settings:
School Experience

(1) that which occurs at the time of the consultation, including discussion and observation immediately before, during and immediately after it.

(2) that which takes place at a time remote from the consultation, but employs material taken from it, based on memory or on written or on audio-visual recordings. (p.228)

They go on to employ the vocabulary of 'hot' and 'cold' to evaluate these as effective educational occasions, e.g.:

The effective teaching of any objective often depends on a 'hot' situation: this focal point in the consultation develops as a result of an unpredictable reaction between patient, doctor and teacher.

Whilst the vocabulary in this context is applied rather differently again it carries implications of actuality, and of a reality which is experienced at first hand, rather than through a post hoc reconstruction. For the medical students and their clinical experiences the contrast between 'hot' and 'cold' medicine was an important one and it concerned the nature of the 'reality' that they were experiencing.

One normal difference between the two contexts lies in the fact that the waiting night marks the beginning of a patient's hospital stay. By the time that students see them in the course of ward rounds, on the other hand, their 'career' as a hospital patient will be starting to take shape, or will be well under way. As a result of this, it is usually the case that when students see patients in the course of ward-work and bedside teaching, their trouble will routinely have been managed and/or diagnosed by the hospital personnel. Very often the patients' acute symptoms will have been treated — and things like severe pain, high fever and so on will have been controlled (if possible) and may have disappeared altogether. Waiting nights provide the students with an exposure to patients whose illness is fresh. In this situation diagnosis will not yet have been done — and the students and the doctors are in a similar state of relative ignorance concerning the precise nature of the patient's presenting complaint. But when students see patients in the course of ward rounds, unless they happen to have seen them on a waiting night, then the distribution of knowledge is rather different. Whilst the students are in a state of relative ignorance concerning the patient, now the doctor who is conducting the teaching round will already be acquainted with the
patient's history and present complaint — either from his own work with the patient, or via the documentary evidence assembled in the case-notes folder.

From the point of view of the distribution of knowledge, then, the two teaching contexts differ. Yet the latter situation — that of bedside teaching — is designed to produce something which approximates to the sort of medical reality that is accomplished in the acute 'hot' situation. As we have said, it is a primary purpose of bedside teaching to provide students with practical opportunities to take histories, perform examinations and formulate diagnoses. The exercise may proceed upon the assumption that the patient's diagnosis is not already agreed upon by the clinical staff, or that management of the illness has not been initiated. The students may be (and often are) required to take the patient's history 'from scratch', as if the patient had not already given it — sometimes repeatedly — to the hospital doctors. This previous work that has been done by the hospital staff may, therefore, be discounted and the participants proceed as if it had not in fact been done. (This generally possible because rather few of the patients will have been seen by students during the waiting night, as the students take turns to come in each week in twos or threes.)

This state of affairs can be illustrated in the following student's description of what happens when a student has seen a patient previously:

After waiting nights, Mr Michael [the consultant surgeon] takes all students to see the new admissions. If you've already seen the patient, you keep quiet while Mr Michael plays games with the others, and sees how well they can make a diagnosis. Then you fill in the details — and try desperately to remember which abdomen it was when you've only seen a little bit of it in theatre.

This same student went on to develop his point about 'playing games'. He instanced a patient with jaundice. They could see she was yellow, he said, and they had been told already that she had cancer: they had had to take what he described as a 'very fake history', since they knew the answers to the questions anyway. He thought that the doctor who was teaching the group might just as well have said: 'There's a patient in that bed, she's got jaundice but she's got secondaries in her liver.' Here the student draws attention vividly to the way in which bedside teaching may be conducted 'as if'
diagnosis of the patient's condition were starting afresh rather than being already established by the doctors.

What we have been sketching here, in describing this aspect of bedside teaching, is a situation which is contrived in order to parallel some of the features of another situation. Clearly, it is not designed to reproduce all the possible features of 'real' or 'hot' medicine. The participants do not pretend that this 'really is' an admission on a waiting night: they do not feign rushing about, coping with emergencies, working against the clock and so on. (In fact this is one of the contrasts that students draw between the two types of situation — that, the pace of the work is very different: 'cold' encounters can proceed at a much more leisurely pace.) In other words, the reproduction of 'hot' medicine in clinical teaching should not be confused with 'acting out' the situation (it is not a 'dress rehearsal' in that sense). It is designed to achieve a reconstruction of selected features, in order to produce a plausible account of the supposedly 'real' situation for specific, practical purposes. We shall develop our comments on these lines subsequently.

Recalling our initial comments on the nature and practice of 'guided discovery' science teaching, it will be apparent that it shares some important features with 'cold' medical teaching; indeed, we might stretch the medical students' term and refer to it as 'cold science'. Of course, the school pupils do not have access to 'hot' science as do the medical students, but the parallel holds in so far as their school science is conducted in such a way as to replicate features of 'real' science. We concentrate on one particular area of school science — physics and biology, as taught to the fifteen-year-old girls at St Luke's. The O grade syllabuses in these subjects last for two years, and at the time of the field work the girls had completed one and a half terms of work. St Luke's was relatively unusual for a girls' school in that it had a strong science department, which was run by enthusiastic, well-qualified teachers. The biology teacher (whom we shall call Mrs Linnaeus) and the physicist (Dr Cavendish) were both firmly committed to the 'guided discovery' ideology embodied in the O grade syllabuses, and it is their classes particularly which exemplify the nature of such 'cold' science.

A typical biology lesson would run as follows: Twenty-odd girls assemble in the laboratory (described in Delamont, forthcoming). Mrs Linnaeus asks someone to summarise the experiment(s) completed the previous lesson. She then asks for further hypotheses relating to, and following on from, that conclusion, which now need to be tested. The girls then suggest experimental designs to test these hypotheses.
Mock-Ups and Cock-Ups

Methods are discussed and written up on the board. Then the class divides into pairs and all perform the same experiment(s). Practical work occupies some forty minutes, with the girls unprompted, writing up in the lulls between bursts of work. When all, or most, of the pairs have completed the experiment, Mrs Linnaeus calls everyone's attention and asks each pair for their results. These are listed on the board, no comments being passed on their 'correctness'. When the list is complete, she asks what can be deduced from them. Pupils scan the results, comment on any that appear aberrant, and decide what the common, overall result is. They then consider whether or not the hypothesis is supported, and, often prompted or guided, produce a conclusion. Once this stage has been reached the formal part of the lesson is over, and the time remaining until the end of the double period is spent in tidying away apparatus, writing up the day's work, with the results and conclusions, and for those who still have time, starting the homework assignment.

During the field work, the classes were 'doing' photosynthesis — working through a series of controlled experiments to display the relative effects of light, chlorophyll etc. We see this as paralleling 'cold' medicine. Just as the patient's condition has been diagnosed, so the biochemical processes of photosynthesis are well known. Just as the medical students are aware that a diagnosis exists, though they do not normally have prior access to it, so too the pupils are aware that biologists know about photosynthesis, though they do not normally have access to that knowledge themselves. The students operate a 'proper' procedure (taking a history, performing a physical examination and so on) — so too the girls go through the motions of stating hypotheses, designing rigorously controlled experiments and deducing conclusions. Neither situation is 'real', but both are parallels of 'real' processes. In both cases, it is important that the appropriate techniques be learned.

The problems faced by Mrs Linnaeus and Dr Cavendish in sustaining 'cold' science came mainly from the girls' 'failure' to perform experiments correctly. On the whole, they were able to steer the discussion into the right channels: the right hypotheses were usually formulated. Difficulties arose in the performance of the experiments themselves. Mrs Linnaeus taught two parallel biology classes. The girls in one group generally produced a set of results, but in the other, the same experiments burned, boiled dry, boiled over or just failed to get finished inside lesson time. Thus, in the first class, Mrs Linnaeus usually had eight to ten sets of results to draw on; in the second, only two or three sets were generally available,
or 'correct', and the ideal of scanning a range of results as a basis for
the conclusion was rarely achieved. In this group, Mrs Linnaeus was
always falling back on statements such as, 'if the experiment had
worked, you would have been able to see...','Actually...'. Given these
two classes, it was possible to see Mrs Linnaeus's 'cold science'
succeeding and failing. Mrs Linnaeus believed strongly in
guided discovery methods, but, for her, the 'guiding' was extremely
important. She steered the pupils' discussion firmly towards the right
answers and 'stage-managed' her classes with brisk efficiency.
However, her strategy was not proof against pupils' potential failure
to perform the physical manipulations necessary in the experiments.

The case of physics was rather different. Dr Cavendish also believed
in a discovery-based approach to science teaching. However, she did not
(or could not) do any 'guiding'. She provided a context in which
discovery could take place — a laboratory full of apparatus and a
textbook — and left the pupils to play at science as they would. While
this may be closer to the situation of 'real' scientific discovery, it
produced a high degree of anxiety and confusion among the pupils,
to the extent that observation was an embarrassing, even distressing,
occupation. The field notes taken at the time reflect some of this
confusion:

Dr Cavendish sums up last week's experiments — in answer to queries
from Fleur, Tessa and Lorraine write down this summary — tho'
they were present at the lesson (Fleur was not). Tessa moves to
check summary with Jackie on next bench. Dr C asks simple
question on basics — Eleanor answers right — Dr C gives longish
explanation of calculating acceleration. Girls then get out equipment
to re-do experiment. Tessa, Mary and Fleur work near me — they
discuss [lacrosse] teams — Mary says she's left the next table (where
she's supposed to work) 'cos they're trying to muddle me up.'
I move to next table where Charmian and Henrietta are explaining
acceleration to Karen — then Angela comes to Karen for help and
is passed to Charmian for a repeat performance.

Throughout the field notes similar episodes — characterised by muddle,
confusion and anxiety — are recorded. For example, the next week it
was noted:

Dr C starts lesson by announcing 'Last week you discovered an
important relationship.' Greeted by ironic laughs. Ignores this
and gives explanations of relationship between force and mass...
(Later) Getting out equipment for an experiment started last time. Chorus of 'It didn't work!' After two experiments (on force, mass and acceleration) the class are still unsure of what they are doing and why. She gives detailed explanation again. Then says 'A time will come (when they will understand it)'. A chorus of ironic echoes of her sentiment.

Tessa, Lorraine and Fleur muddle around for some time with apparatus — eventually work out what they are doing from book and common sense. Henrietta, Charmian and Michelle — much more together — have actually got some figures out of it!

Every lesson Dr Cavendish's attempt at summarising previous work would be greeted with dismay — the girls had always failed. The experiment had failed, or the mathematics were too hard, or the conclusions had simply not emerged. Dr Cavendish would be forced to re-explain, or would do the experiment herself, or rework the maths. Many of the lessons only 'worked' because of a pupil, Charmian, who conducted tutorials at the back of the room using the textbook and her group's results!

This is clearly an extreme example of the problematic nature of such 'cold' science. But we would argue that such types of encounter are always precarious: they require a degree of careful creation and maintenance and the borderline between bringing them off and spoiling them is narrow. Even the usually well-managed bedside teaching can easily be spoiled.

As we have pointed out already, patients may not be seen by the students until some time after the initial admission to the hospital ward. Now, although the teaching situation may be steered towards the diagnosis of the patient's trouble, by the time that bedside teaching takes place, the nature and the appearance of the illness may have changed. It is a normal trouble associated with 'cold' medicine that, with the passage of time, the initial signs and symptoms of the presenting complaint may abate or disappear altogether. Hence, when a teacher wishes to demonstrate a point of diagnostic observation and inference, the signs he wishes to show the students may well elude him. This contingency can be illustrated in the following field-note extract:

Dr Muir reminded us that anaemic patients often have a dry, red, swollen tongue. He asked Miss Miniver to put out her tongue: it looked quite normal. 'I'm terribly disappointed', the doctor said, 'on Saturday she had a red swollen tongue.'
There was no doubt that the patient was still to be considered 'anaemic', but the doctor had expected to provide a further example of diagnostic signs, as well as 'clinching' the diagnosis already arrived at. In the face of such events, the clinical teachers were observed to resort to 'repair' devices of various sorts. The two commonest variants were 'In fact...' and 'retrospective' clauses, both of which accomplish the same thing. In the example given above, the doctor uses a 'retrospective' appeal to a previous state of affairs that 'fitted' the order of things that he is putting forward to the students. Similarly, just as Mrs Linnaeus would attempt to repair the students' failings in their experiments and findings with her 'Well, actually...', the doctor would fill in what 'In fact...' should have appeared in the patient as a reflection of the underlying pathology. For example:

[In response to questioning from one of the students] the patient reported that he had not been having to pass water many times during the day. But Dr Massie commented, 'In fact, he reported frequency during the day as well...'

By means of such repair work, 'cold' medicine and science are once more brought into line with what is known about the phenomena of the 'real' world. The rationality and efficacy of scientific and medical enquiry are reaffirmed and demonstrated by the invocation of such appeals by the teachers concerned.

The successful accomplishment of 'cold' medicine and 'cold' school science depends upon the observation of context-specific conventions. In particular, sustaining the reality depends upon the participating acting 'as if' the answer to the puzzle were not already established. In the medical school, the teaching session may be threatened if a patient orients to the fact that the answer is already available to the doctor. Such a patient may protest about the students' enquiries, point out that the questions are irrelevant to his or her own care, and that the doctor himself can readily provide the answers (and more). Such a patient's 'grumbling' may not only spoil the 'bedside manner' of the doctor and students — it may also threaten the encounter by laying bare the nature of its contrivance.

Such disruption is also a consequence if the patient goes even further in this direction. Some patients will not only be aware that the doctor knows what is wrong with them — they may also know the diagnosis themselves. Failure to act in accordance with the tacit rules of 'cold' medical teaching may therefore lead them to divulge...
this information. In other words, they may treat a student's initial question as a direct request for this diagnosis, rather than an opening move in a sequence of questions and answers from which the diagnosis may be inferred by the students. For example:

Student: What brought you into hospital...
Patient: Ulcerative colitis, the doctor called it...

In other words, if the bedside session is to come off as a successful recapitulation of 'real' diagnosis, then the work that has been done on the patient must be set aside by those 'in the know' (cf. Atkinson, 1975). Therefore, in conducting and 'stage-managing' such bedside encounters, the teaching clinicians may need to guard against such untimely disclosure of information. This can be illustrated from our field notes:

A girl student was exploring whether the patient [an elderly woman] had any signs of anaemia. As she was examining her eyes... the inside of her mouth, the creases in her palms etc., the old lady chipped in, 'I've had a blood transfusion since I came in...'
The doctor interrupted, 'Don't tell them too much! You're giving the whole show away — giving away the whole shooting-match!'

Giving away too much involves revealing the stage-management of 'cold' medicine by making explicit the information which would otherwise remain unspoken.

A further field-note extract also demonstrates how the clinician may guard against such an eventuality. In this case he invents a 'meta-game' in which to locate the rule that the patient is not to divulge data to the students.

The consultant began the teaching session by telling the students, 'Imagine that Mr — is an Eskimo, who's deaf and dumb and mentally deficient...'. In other words they were not to take a history, but were to proceed straight to the physical examination. As the various students took the patient's pulse, examined him for oedema, tested his eye movements, examined his thyroid etc., the consultant commented to the patient that he was 'doing fine', and that he was using him as a 'male model'. The consultant then asked one of the students to examine the patient's precordium. When the student opened the patient's pyjama jacket, he exposed
an operation scar on the left side of his chest.
Patient: 'Do I tell them about that?'
Consultant: 'No...as far as they're concerned that's a shark's tooth that tore you apart.'

In much the same way, trouble can occur in school science if the particular conventions of cold science are not respected. This can be illustrated in the following observation from a biology lesson, made during the girls' work on photosynthesis. (The experiment under discussion involved covering growing leaves with silver foil with several holes cut in it. After a few days the leaves are picked and tested for starch, which should only be present in the uncovered patches).

Michelle: Mrs Linnaeus, I don't see how that will prove it — it could be all sorts of things we don't know anything about.
Mrs L.: (Comes down the lab to stand near Michelle, asks her to expand her problem — to explain what she doesn't see.)
Michelle: Well, you said if there was starch in the bare patches it would mean there was — it would be because of the light. But it could be the chemicals in the foil, or something we know nothing about.
Sharon: Of course it'll prove it — we wouldn't be wasting our time doing it if it didn't.
Mrs L.: I don't think that's a very good reason, Sharon! (She laughs, then goes on into a long and detailed vindication of the experimental structure. This involves discussing the molecular structure of carbohydrates, and other phenomena. Few other girls bother to listen — Henrietta does.)

We can note how both girls' exchanges are problematic, given the nature of 'cold' science. Michelle treats it as 'hot' science — that the process really is one of scientific discovery in which the phenomenon under consideration is genuinely not understood. From the point of view of her learning the logic of science the teaching may be regarded as successful — but it causes problems in the here-and-now situation of the classroom, since the teacher's smooth production of a lesson depends upon treating the 'experiment' at its face value. Sharon's interjection can be read as an attempt at a remedial exchange: she attempts to reaffirm the nature of 'cold' science as really doing what is claimed for it. However, in doing so, she lays bare the stage machinery of the exercise — shows that it is a 'put-up job'. She
explicitly orients to the teacher's prior knowledge; they would not be wasting their time. She sees that the enterprise has been managed in such a way as to produce an outcome in line with Mrs Linnaeus's intended result — the right answer. Sharon threatens the mock-up as a plausible situation. Mrs Linnaeus therefore denies that Sharon's approach is a 'reasonable' one and reaffirms the rationality of discovery methods. (Note, however, that she does not deny Sharon is right.)

As a teaching strategy, 'guided discover' in one of its forms is difficult to sustain. There are many points at which it can go wrong. Teachers using it need to engage in artful stage-management if they are to bring it off successfully. If the nature of this management is not respected by any of the parties, then trouble can ensue. By the same token, the interaction can become problematic if the 'stage machinery' becomes too visible in the course of the encounter. In either event, it becomes difficult for the participants to create and maintain the 'reality-like' nature of the exercise.

III

We should now like to develop our analysis of these varieties of teaching encounter, and the characteristic modes of pedagogy associated with them by reference to a game-theoretical approach. We wish to suggest that the sort of teaching encounters that we have been commenting on can be usefully approached using the perspective of 'information-games' — an approach derived from Lyman and Scott (1970), Scott (1968) and Goffman (1970). The idea of an information-game is one of four game-theoretic analytical devices that derive from Goffman's commentaries on the conduct of everyday life. Scott summarises these 'gaming' notions in this way:

In face-games each participant manoeuvres to maximize his own realization of a valued identity, while seeking an equilibrium that will permit others to do likewise. In relationship-games, the participants seek to create, maintain, attenuate or terminate personal relationships. In exploitation-games, the participants seek to maximize their position of power and influence vis-a-vis one another. In information-games, the participants seek to conceal and uncover certain kinds of knowledge. (Scott, 1968, p.159: emphasis as in original)

As Scott himself points out, these may be treated as distinct for
analytical purposes only. In concrete situations, they are 'empirically
overlapping', and the possibility of the application of them all to
educational encounters will be apparent.

The notion of an information-game has been applied in a particularly
telling way in Scott's ethnography of race-track punters, and their
attempts to discover 'tips' and reliable information concerning the
horses in a race (Scott, 1968). Similarly, it has been brought into
play to analyse the process involved when blacks pass for white, or
homosexuals pass for straight and so on (Lyman and Scott, 1970):
they seek to ensure that information and aspects of their identity
that may be discrediting shall remain undisclosed. In the same way,
in Scott's work on horse-racing, whilst the punters seek to
uncover relevant information, so the owners, trainers and jockeys
may be involved in covering up the information that the betting man
seeks (e.g. whether or not a horse will really be trying to win the race).
In the course of such information-games, the actors will be engaged in
sequences of covering and uncovering moves. Whilst one or more
participants will seek to discover information, and so initiate
uncovering strategies, so these moves may be countered by covering
up on the part of the actor or actors who have control of the
information that is sought. In the course of interaction, those engaged
are involved in monitoring the 'information state' of the other
actors, in an attempt to gauge how much information they have
gleaned, or how much they 'really know'. The process is one of
'strategic interaction', in Goffman's terms.

Our introduction of 'information-games' — in this form at any
rate — may appear paradoxical or even perverse in a discussion of
pedagogy. It is an_Nobvious_ feature of education that it is concerned
with communication and the transmission or presentation of
knowledge, and the rationale may appear to be quite the reverse
of 'information games'. Certainly, we need to modify Scott's
formulation somewhat. Scott's discussions are addressed almost
exclusively to situations where one or more actors are concerned
that information should remain undisclosed. However, we can extend
the notion to situations where the purpose of the action is that
information should (or, at least, could) be disclosed and discovered,
but where the _process of enquiry_ is what is at stake. Consider, for
instance, what goes on when the panel of a show like _What's My Line?_
try to guess the identity of a guest celebrity. Although the game is
set up in such a way that the guest's identity is hidden, there is
considerable chagrin and embarrassment if the panellists do not in
fact arrive at the right answer. The fun of the game is not in the 'contest', but in the process of question and answer whereby the answer is arrived at. The same general principles apply to the 'cold' medicine and science that we have been discussing.

As we have shown, the successful conduct of these teaching encounters depends upon the successful discounting of already established knowledge. In medicine, beside teaching proceeds on the basis that previously acquired knowledge about the patient's illness should be set aside so that the diagnostic exercise can proceed as it would under the 'normal' circumstances of 'hot' medicine. In the same way, school science proceeds on the tacit assumption that the pupils are engaged in the 'discovery' of phenomena which are already well-known, and which the teacher has already set up as the end point of their endeavours. In other words, what is at stake in teaching situations of this sort is not so much that the relevant conclusions should remain undisclosed, but rather, that they should appear in the appropriate manner and at the appropriate time. It is necessary that the parties should 'go through the motions' of correct medical or experimental procedure. The conduct of the information-games serves to ensure that an orderly production of knowledge should occur in accordance with the rules of appropriate 'discovery' methods.

In this regard, the sort of management of knowledge that we are describing is a regular feature of teacher-student interactions. Information-games of various sorts are normal features of classroom discourse. It is by no means the case that all 'teaching' implies the didactic presentation of knowledge. In various ways, the accomplishment of teaching may depend on the teacher's knowledge and information being temporarily kept back from the students. This has been noted by Sinclair and Coulthard (1974) and by Stubbs (1975). Stubbs, for example, suggests that many teachers' questions can usefully be described as 'pseudo-questions': that is, what pass as questions in the classroom are rather different from those usually encountered in other social contexts. Teachers' questions are not rhetorical, in so far as they do require an answer of some sort, but they do not indicate ignorance on the teacher's part. For most of the time, when a school teacher asks her class: 'Who won the battle of Waterloo?', we would be wrong in assuming that the teacher herself does not know, and is expecting her pupils to instruct her in elementary history. Whereas most questioners' utterances will normally be treated as displays of their ignorance, teachers' questions will
normally be grounds for the display of their knowledge — either in correcting pupils' answers or in acknowledging their correctness. Similarly, when a teaching doctor asks a student to produce a diagnosis about a patient, he is normally checking to see if he can do it successfully, rather than seeking the 'second opinion' of a colleague. In other words, the production of certain varieties of pedagogical device depend upon the suppression of the teacher's own prior knowledge of the 'correct' answer, so that students themselves may display it or elicit it for themselves, whilst the teacher may prompt the students towards the right answer. From this point of view, then, the devices of 'cold' medicine and science can be seen as such elementary gambits 'writ large', so as to provide the grounds for extended educational encounters.

We can now go on to consider briefly the nature of 'cold' medicine and science rather more precisely. These pedagogical practices can be seen as 'glossing' devices: that is, that they are ways of 'doing observable-reportable understanding' (Garfinkel and Sacks, 1970). These teaching practices are socially organised ways in which the participants produce something like a 'working model' of medical diagnosis or scientific experimentation in such a way as to make observable, teachable and reproducible the methods whereby these things are normally done by competent members of the respective professions. Garfinkel and Sacks themselves suggest something of the sort in their discussion of glossing practices that they refer to as 'mock-ups' and they refer explicitly to working models as a concrete illustration:

**Mock-Ups.** It is possible to buy a plastic engine that will tell something about how auto engines work. The plastic engine preserves certain properties of the auto engine. For example, it will show how the pistons move with respect to the crank shaft; how they are timed to a firing sequence, and so on...

Let us call that plastic engine an account of an observable state of affairs. We offer the following observations of that account's features. First, in the very way that it provides for an accurate representation of features in the actual situation, and in the very way it provides for an accurate representation of some relationships and some features in the observable situation, it also makes specifically and deliberately false provision of some of the essential features of that situation. (Garfinkel and Sacks, 1970, p.263)
In the same way, the 'mock-ups' that we have been concerned with are also made possible by the essentially false premises that 'discovery' is being done *de novo*, rather than the action being the stage-managed recapitulation of already known 'facts'. Garfinkel and Sacks go on later:

...the knowledge of the ways in which the account...makes false provision is for the user a controlling consideration in permitting it to be used as an account of the actual situation. (ibid.)

In the educational context, the teacher's prior knowledge of the end-point of the students' enquiries (one of the 'false provisions') provides the teacher with a resource in controlling the situation. Students' lines of enquiry and inference can thus be managed in such a way as to facilitate the appearance of the conclusion that was sought. In a similar manner, the students may use an understanding of the nature of the 'false provisions' as a resource in their own problem-solving. When medical students are aware that the patient has already been diagnosed, then they may try to ascertain the 'right answer' by investigating the end-of-the-bed chart, the folder of case-notes or other ward personnel — thus short-circuiting the normal investigative procedure. Similarly, as we have discussed, pupils can invoke their understanding of the teacher's prior knowledge of the outcome of their experiments in justifying or querying the usefulness of certain courses of action.

What we are dealing with, then, are carefully managed 'versions' or 'reproductions' of certain types of reality, whose verisimilitude depends upon a degree of 'stage-management' on the part of teachers, and upon the systematic falsification or transformation of selected features of that reality. Goffman has recently commented on just this sort of transformation in his discussion of 'framing' (Goffman, 1975):

> In our society, and probably in all others, capacity to bring off an activity as one wants to — ordinarily defined as the possession of skills — is very often developed through a kind of utilitarian make-believe. (Goffman, 1975, p.59)

And he goes on to comment that events which are encountered are "decoupled" from their usual embedding in consequentiality, which again draws our attention to the way in which the 'reality' must be
recreated in 'unreal' circumstances if their authentic working is to be assured. The degree of abstraction and reconstruction involved can vary. Goffman cites the example from clinical medicine where modern techniques allow for the mechanical simulation of illness and treatment — for instance the use of manikins which reproduce the reaction of patients to the administration of anaesthetics (Levinson, 1970). This variety of 'bedside' teaching depends upon an extreme abstraction, whereas the clinical teaching we have been concerned with more closely approximates the personnel and appearance of normal medical work.

The relationship between 'reality' and 'mock-ups' or 'practice' is dialectical. It is particular features of 'reality' that are selected and reconstructed to produce the 'working model'. In the same way, the model itself provides an interpretive framework whereby the reality may in turn be understood. Through these 'reality-like' experiences, students amass a stock of typifications and recipes for action in typical circumstances in preparation for situations that are 'for real' (cf. Schutz, 1964).

The precise nature of the medical and scientific mock-ups lies in the way both provide occasions for the methodic reproduction of knowledge. Both medicine and science are socially organised ways of furnishing us with stocks of knowledge about the natural world and ways of handling it. They both consist of devices for determining facts — the facts of chemistry, biology, medicine and so on. When we speak of factual propositions — for instance, as against 'opinions', 'beliefs', 'guesses' and so on, we treat 'facts' as being warranted in a way which does not apply to those other classes of knowledge (cf. Phillips, 1973). The status of such 'facts' is not something which is essential or inherent in the account of the world which they embody — but rather resides in the procedures and methods which are mobilised to produce and validate the knowledge. This view is summarised by McHugh (1970):

... nothing — no object, event or circumstance — determines its own status as truth, either to the scientist or to science. ... An event is transformed into the truth only by the application of a canon of procedure, a canon that truth-seekers and analysts must formulate in providing the possibility of agreement.

The place of such socially shared procedures for the production and evaluation of scientific knowledge is highlighted in Kuhn's discussion
of stability and change in science (Kuhn, 1970). For Kuhn, it is the scientific 'paradigm' (or 'exemplar') which is the ground for scientists' consensus over appropriate topics for enquiry, methodologies and the sort of answers that might reasonably be expected from investigations. The paradigms:

...provide scientists not only with a map but also with some of the directions for map-making. In learning a paradigm, the scientist acquires theory, methods and standards together, normally in an inextricable mixture.

Hence the consensually given 'facticity' of interpretations of states of affairs depends upon those 'facts' having been produced by the appropriate and agreed-upon methods. By the same token, the efficacy of the conventional methods is constantly reaffirmed by the recurrent and reliable production and reproduction of recognisable 'facts'. The stage-management of 'cold' medicine and science furnishes occasions for the concrete display of the warranted production of factual knowledge. The methods of enquiry that are required of the students in these contexts parallel those of 'real' knowledge-production; the teacher is in a position to organise and control the situation in such a way that the requisite answer will be forthcoming for the students' investigations. Hence the warranted nature of the view of the world ('facts') and the distinctive way of looking at the world ('methods') are affirmed. What appears as 'discovery' is the recapitulation of the socially agreed nature of 'science', 'medicine' and the natural world.

References


University of Edinburgh.
Royal College of General Practitioners (1972), The Future General Practitioner, The Royal College of General Practitioners, London.
MEDICAL MYSTIQUE: INDETERMINACY AND MODELS OF PROFESSIONAL PROCESS

by

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Summary

This essay is a contribution to the sociology of 'the professions'. Our starting-point is a recent paper by Jamous and Peloille, 'Professions or self-perpetuating systems? Changes in the French university-hospital system', in Jackson's collection of papers on Professions and Professionalization. Jamous and Peloille's paper is in two sections. They begin with a theoretical discussion in which they attempt to derive a conceptual scheme for the analysis of professional processes, and then go on to illustrate their scheme by a case-study of academic medicine in France.

The distinctive contribution that Jamous and Peloille make is their analysis of the relative importance of two types of professional knowledge: referred to by them as Indeterminacy and Technicality. Indeterminacy refers to that area of 'private' knowledge or expertise that defies precise or explicit formulation. Technicality, on the other hand, embraces an occupation's knowledge and skill that is 'public' and that can be precisely laid down and codified. Jamous and Peloille argue that the 'professions' are occupational groups for whom Indeterminacy is high: they rely heavily on implicit knowledge and rules.

We begin this paper with a critique and development of Jamous and Peloille's original position. We highlight a fundamental confusion in Jamous and Peloille's use of the notions Indeterminacy and Technicality. They appear to use them to refer to the social construction of professional knowledge - i.e. to use them to describe professional ideologies. But they also try to use them to erect some objective criterion by which occupations can be classified independently of their members' constructions. We argue that the second of these usages is invalid; and that it is the former, ideological connotation of the terms that is of potential value.
We go on to consider their case-study in the light of this critique. Subsequently we present two case-studies of our own, which illuminate further the uses and limitations of the insights derived from Jamous and Peloille. In the first case study we show how the recommendations of the Todd Report were seen by the members of the profession at large as threatening the tacit, intraprofessional definition of medical competence. We show how claims over the Indeterminate status of knowledge claimed by various segments of the profession entered into negotiations over relative status of various interest groups. The second case study concentrates on the crisis over General Practitioners' pay which occurred around 1965. The claim of the General Practitioners to practise a more 'indeterminate' form of medicine was ignored by other specialties, until the General Practitioners' representatives manoeuvred themselves into a politically stronger position. We examine the suggested changes in General Practitioners' pay and conditions of work, and the effects of their implementation on the doctors' relative status within the profession.
1. **Introduction**

In the following paper we shall be considering the contribution made to the sociology of 'the professions', and to the sociology of medicine in particular, by a recently published paper: Jamous and Peloille's "Professions or self-perpetuating systems? Changes in the French university-hospital system" (in Jackson (Ed.) 1970). Although we do not entirely agree with the views expressed by Jamous and Peloille, we believe their approach deserves attention inasmuch as they develop ways in which we can consider the types of knowledge and expertise that an occupation creates, legitimates and lays claim to, and can relate such knowledge and expertise, and changes in it, to the social processes characteristic of that occupation.¹ In the paper Jamous and Peloille set out to achieve two major ends - firstly, to outline a general theory for the analysis of occupations, and secondly, to analyse the historical development of the French Medical Corps in the light of this theoretical framework. In our discussion of their paper we shall follow a similar scheme. First, we shall discuss their theoretical formulations and the example they discuss, and in this preliminary discussion develop our own theoretical perspectives. Second, we will illuminate these ideas in relation to a further historical analysis of our own, drawn from British medical practice.

Any study of the medical profession, or of the professions in general, immediately confronts the continuing definitional problem. In his classic approach, Hughes set aside any view of 'the professions' as objectively defined occupational groups sui generis - the notion of 'professions' and the core values and traits ascribed to them, by e.g. Goode (1957) or Barber (1963), are to be viewed as claims made by their members for occupational groups. The fruitful line of enquiry is not 'What is a profession?', but rather 'What are the circumstances in which people in an occupation attempt to turn it into a profession, and themselves into professional people?' (Hughes 1958).² But as
Johnson points out, (1972), Hughes' reformulation of the problem, and further studies on these lines, do not present us with a solution. It is insufficient to state simply that an occupational group is claiming 'professional' status; such claims are not made in a social vacuum. We also need to know what is actually being claimed at any given time. We must examine such issues as the social needs a group claims to serve, the minimum conditions it lays down as necessary to successful practice, and the formal and legal recognition the occupation demands. Of paramount importance in such processes of negotiation and redefinition is the specialised knowledge and expertise to which the occupation lays exclusive claim.

2. Determinacy and Indeterminacy

In common with other 'new' approaches to the sociology of 'the professions' Jamous and Peloille begin with a disclaimer: they will suspend any prior assumptions as to what constitutes a profession, or of the social functions that professions fulfill. Accordingly, they do not base their analysis on the belief that the professions are any different in kind from other occupational groups, nor do they seek to identify any 'core values' or distinctive traits that would mark them off in any absolute fashion. The distinction which they do wish to introduce is rather one of degree, and, they maintain, one that is applicable across all occupations.

The dimension which they seek to develop as a classificatory device is referred to as the Indeterminacy/Technicality ratio (I/T for short), and we shall begin by describing and examining this concept. What follows is what we take them to mean - their precise definitions being somewhat elliptical; later we suggest ways in which this dimension is far more complex than their formulation indicates.
By 'Technicality' they refer to that portion of the means of production at the command of an occupation which is entirely susceptible to codification in terms of explicit, public rules, procedures or techniques. The knowledge or ability required for the successful performance of a given occupational task could thus be rendered in a precise list of specifications - for instance in a textbook or working manual. In an occupation which (hypothetically) was characterised entirely by Technicality, these public, formal rules would exhaust the knowledge required for successful practice. Performance could be uniformly and unambiguously evaluated by reference to these public criteria. Similarly it would be possible for the means of production and their manipulation to be copied unaltered from generation to generation of practitioners. The sole criteria for success would be the complete mastery of these techniques, on the basis of cognitive ability, physical dexterity or the like.

'Indeterminacy', on the other hand, refers to a variety of types of 'tacit' and private knowledge that is the personal property of the practitioner. It cannot be made explicit, and it remains untranslatable into precisely formulated rules or prescriptions. Unlike techniques such means of production are not transmissible by means of public formal methods, and may be transmitted by example, or observation of practice by the trainee. Some types of indeterminate knowledge may not be passed on at all, and personal rules of thumb are developed afresh by each new practitioner. Whereas the formal rules of technicality, once internalised by the practitioners, remain externally given, private, indeterminate knowledge is internalised only. Thus, the ability or expertise conferred by indeterminate means, and performances based on them become defined as personal qualities ('virtualities' in Jamous and Peloille's terminology) of those who have internalised them. An occupation that was (hypothetically) based entirely on indeterminate means would therefore recruit on the basis of personal
qualities, and would rely on personally developed modes of operation.

If we consider the medical curriculum, for instance, in contrast to clearly 'technical' subjects like biochemistry and anatomy, we can see areas that remain defined as 'indeterminate' throughout the training of a doctor and in his subsequent work. An obvious example is the acquisition of skills in dealing with patients - an aspect of the doctor's work which the profession as a whole believes to be entirely transmitted by indeterminate means. The nature of these indeterminate means varies. For some the ability to interact with patients in an 'effective' or 'satisfactory' way (however these may be defined) is seen as an innate ability - a basic personality trait, which may be improved by formal training, but which is susceptible only to marginal changes. For others the ability is one which is believed to be largely acquired during training, and can best be gained by personal 'example' rather than by public prescriptions: as one medical student put it to one of us, 'by means of osmosis rather than transportation'. Similarly, the belief in a doctor's diagnostic 'flair' or 'nose' and the belief in such notions as 'clinical judgement' as personal virtualities is a central, and, in Jamous and Peloille's terms, indeterminate feature of training and expertise.

Jamous and Peloille suggest occupations are marked by a mixture of both explicit and implicit expertise, publicly agreed techniques, and 'rules of thumb'. It is the ratio of determinate Technicality to Indeterminate means that Jamous and Peloille take as their criterion for the classification of occupations. They see 'professions' as end results of:

1. 'The way in which the general balance of social forces, and the system of legitimacy which corresponds to it, uses and expresses this ratio in each historical occasion.'
2. 'An Indetermination/Technicality ratio which characterises the production process making it possible to arrive at the results expected of any given occupation or activity.'

Jamous and Peloille present these two definitions as if they were synonymous, or at least followed one from the other. It appears to us, however, that they are in fact quite distinct notions and the confusion between them gives rise to much of our criticism. For in (1) we can distinguish a use of the I/T ratio as a political or ideological concept - a characterisation of an occupation's members' definition of the situation, and a formulation that is relativistic. But (2) suggests some absolute criteria which define this classification, and which would thus offer the observer an objective yardstick whereby all occupations could (at any time) be classified. It suggests a description of an actually existing state of affairs in the social performance of the practitioner, and a characteristic inherent in the production process. Whilst I/T (1) is clearly a concept for historical analysis and social change, I/T (2) appears as essentially a-historical in its reference.

If we look at the wording of a definition of the two terms in their formula, we can see how the two notions come together.

'The I/T ratio expresses the possibility of transmitting, by means of apprenticeship, the mastery of intellectual or material instruments used to achieve a given result. This makes it possible to appreciate the limits of this transmissibility; i.e. the part played in the production process by 'means' that can be mastered in the form of rules (T), in proportion to the means that escape rules and, at a given historical moment, are attributed to virtualities of producers (I).'

Although the passage might appear to refer primarily to historical processes, the references to the 'possibility'
of socialisation by determinate means and the mapping of 'limits' of this aspect reveal a belief in the objectivity of this. What appears on the one hand as an expression of social forces becomes on the other hand reified into an invariant definition of the occupation.

'The occupations and activities which concern us are the ones which lie on that sector of the dimension where the I/Ts are usually high. This sector does not include all occupations nor only the occupations usually called "professions". Unfortunately, Jamous and Peloille do not enter into a discussion of just which occupations would fall into this sector with the 'professions', and their sole reference to the general applicability of their classificatory system is a brief discussion of pharmacists, where they use it (without any presentation of evidence) to distinguish the academic side of pharmacological research from the retail end of the occupation's spectrum. Subsequently, they admit that they will, loosely, assign the term 'professionals' to mean 'occupations or activities whose I/T ratio, intrinsic to the systems of production, is generally high'. Thus, despite their earlier disclaimer, we find in effect a return to the notion of 'professions' as occupations apart - albeit with some (unspecified) bedfellows.

Moreover, the statement that the 'professions' will all fall on that part of the sector of the I/T spectrum where Indeterminacy is high is itself untenable. The maximisation of 'I' would tend toward the situation described by Freidson (1972); in this limiting case recruitment and performance are based on entirely indeterminate criteria - e.g. 'inspiration', 'touch', 'knack', etc., and the power-base of the occupation and control of membership and means of production are thereby weakened:

'... to be secure, the occupation must establish its success on knowledge and skill which can be
obtained only by becoming a member of the occupational group. If pre-eminent knowledge and skill stems from an accident of heredity, whether inheriting witchcraft or a bone-setter's 'touch' or from a supernatural 'calling' or 'gift', then it is always possible that the people outside the occupation can claim equal or superior skill. The occupational group, then, must be the prime source of the criteria that qualify a man to work in an acceptable fashion.'

The problem of the management of Indeterminacy would rather appear to lie in establishing a sufficient claim to areas of indeterminate practice to preserve and enhance the 'mystery' of the occupation, and to protect the esoteric and private nature of the means of production, without abandoning any claims to a sufficient degree of technical knowledge and skills to justify the practical efficacy of the occupation in question.

A further point is that it is certain that in many cases the means of production are not perceived as rule-governed by the practitioners themselves. This, however, by no means precludes the possibility of such rules existing. Polanyi has considered just this point, and he points out that the 'aim of a skilful performance is achieved by the observance of a set of rules which are not known as such to the person following them' (1958). We can make no hard and fast decision as to the indeterminacy of the means of production vis-a-vis the observer. Numerous studies have by now documented the tacit rules operated in day-to-day situations by members of a profession but we can accept only that certain members of an occupation define aspects of their practice as indeterminate - that is, they define it as composed of and determined by private knowledge which is not susceptible to precise formulation, and public discrimination. There seems to be no reason to assume that all members of a given occupation should agree on the relative importance of explicit and implicit rules in their repertoire of expertise, nor that 'insiders' or
'outsiders' should likewise agree. Indeed, we would rather argue that it is differences in such perceptions that give Jamous and Peloille's notion its real value. We can now see that the notion of quantification of ratio of Indeterminacy to Technicality is problematic, inasmuch as it is based on the 'objective' usage. If the precise definition of an I/T ratio is inappropriate, it would also follow that the mechanism for classifying occupations on the continuum (and hence of the re-admission of 'professions' as a quasi-category within it) also fails.

The absolute usage of the notion of Indeterminacy would therefore seem to be unusable, and its application should be confined to the imputation of non-accountability to areas or practice on the part of an occupation or segments within an occupation.

3. The French Medical Corps

The second part of Jamous and Peloille's article presents their case study of the development of the French Medical Corps. This empirical material and analysis is introduced by a significant and crucial conclusion to the earlier theoretical section. In this the authors distinguish three phases in the development of a profession. First, in the early stages they suggest there is a professional ideology that is characteristic of the dominant group within the profession, and that the struggles which develop within the profession are around the relative proportions of scientific rationality or transferable techniques that comprise the productive aspects of the profession's work. Second, in a later stage the role of the transferable techniques themselves becomes the centre of the ideology and the centre of confrontation within the profession. This stage is followed by a third, and, apparently, final one where scientific rationality takes over, and the social functions and consequences of the professional activity become the primary object of conflict and
ideological rationalisations. This model contains both elements we have discussed in relation to the I/T ratio: it uses the ratio as an expression of the balance of forces in a profession, and the changes that occur through time \((I/T(1))\), and at the same time it imputes an objectivity to the ratio that imparts a dynamic and direction to change \((I/T(2))\). This model can best be understood by examining their analysis, and it is useful first to summarise the data they report.

From the 19th to the beginning of the 20th century, the majority of French hospitals were run as charitable institutions, and the majority of patients who used them were poor. As a result, the doctors attending viewed themselves as working there as 'visitors', working short hours, usually for no money, with their primary interest in the hospital as a source of clinical material. Throughout this period, hospital doctors were in a particularly 'strong' situation. They alone could decide the nature of their activities, they were free from outside control, and rules their own profession quite independently of others. The doctors were most influential in giving orientation and shape to the 'health policy' of the country. However, a gradual change took place from the beginning of the 20th century, with the introduction of Social Security and an increase in the social class range of patients admitted to hospital. By 1953 there had been great alterations in the running of hospitals, and a massive increase in the participation of doctors in hospital treatment: doctors had moved from the status of external 'visitors' to that of effective employees.

19th century hospital doctors combined the roles of clinician, teacher, and researcher, and this unique combination was the basis of the rise of the French Clinical School. In the earlier part of the 19th century, hospitals were the main research environment. Thus social selection and scientific selection in medicine coincided. Later in the same
century, with the emergence of important research work in physiology and bacteriology and related subjects, clinical medicine began to lose its significance as the primary area for scientific research. But, as science progressed outside the hospitals, the social selection system of medicine persisted with its basis in hospital and clinical training, and examinations became more and more 'rites of passages' for transition to a particular and elevated status.

As a result of these changes and pressures from those outside the hospital system, Jamous and Peloille suggest that by the middle of the 1950s a 'crisis' existed in French medicine that was the source of the 1958 Debre Reform. This reform, studied elsewhere by Jamous and Peloille, created a 'university and hospital centre, where the full-time medical groups were found to develop medical care, teaching and research' - a reform that brought back together the elements of medicine that had been moving apart.

Jamous and Peloille begin their analysis by discussing their views on the nature of a profession. Dominated by a group that defines the profession in ideological terms, they see a profession as characterised - at least in the early stages - by a process of struggle, with those who are subordinate at the same time being those espousing a technical and scientific orientation. In other words, the I/T ratio is skewed through the profession with a higher proportion of indeterminacy claimed by the dominant group, and a higher proportion of technicality by the subordinate groups. This picture is quite clearly exemplified in French medicine after the middle of the 19th century when the overlap of the scientific and the clinical disappears, and Jamous and Peloille convincingly argue the effects that advances in science and technology brought to bear on the shape of the medical profession.
A further aspect of their argument - that indeterminacy is made principal by the affirmation of 'learning at the bedside' and that the medical profession is characterised by the 'virtualities' of its producers - is also convincing. In presenting this argument they put forward the idea that indeterminacy is a link which both supports the charisma of the doctor but also makes free choice in the medical system 'good', an ingenious understanding of the complex relationship that exists between doctors and their public.

Clearly, as Jamous and Peloille demonstrate, the concepts of indeterminacy and technicality can be used not only to distinguish between occupations, but also between segments and individuals within the occupation. We can think of segments within an occupation that lay claim to indeterminate abilities - the relative claims as to successful 'doctor-patient relationships' between different specialities within the field of medicine. Differential claims as to the status of surgery as 'cut and dried', or simple 'carpentry' versus definitions that stress the interpersonal relations and the role of diagnostic judgement might be other examples. Moreover, we would argue that 'indeterminacy' is not a diminishing residue, left over when scientific theory and cognitive rationality have been exhausted (the view suggested in one of Polanyi's definitions of 'tacit knowledge' - (Polanyi, 1962)). Rather we see areas of indeterminacy as jealously preserved domains whereby the esoteric nature and specific expertise of an occupation are maintained. They give rise to powerful means of social control both within the occupation, and between its practitioners and the lay public.

However, except insofar as it illuminates the differences in the balance of interest between the dominant and subordinate groups, the use made of the I/T ratio by Jamous and Peloille is rather limited. The interpretation they offer of the case material bears a close resemblance
to that used by others interested in the study of 'pressure group politics'. This is not to suggest that the I/T ratio is of no use. Indeed, it provides an approach to understanding the dynamic which lies behind the progressive changes which characterise the medical profession. However, Jamous and Peloille make little use of their ratio to do this.

Part of the reason for their limited use of the I/T ratio may stem from the simplicity of their model, as it constrains within one dimension a complex set of phenomena, some of which may actually be crucial to other dimensions. But another, more telling, lies in the way in which they see technicality and indeterminacy as objective factors, and the consequent directionality they impose in their analysis. This is clearly shown in their model of the development of the profession cited earlier: in this, it is striking that they emphasise that it is scientific rationality that eventually 'takes over' within a profession. Conflict between the indeterminate and the scientific is an important dynamic, but it seems quite unnecessary to inject, as they do, a particular outcome to this, and the outcomes of such conflicts are empirical findings, not the results of theoretical prescriptions. Jamous and Peloille's study used the I/T ratio in two ways, and as they slip from the relativistic to the objective (from I/T(2) to I/T(1)) so the insight of their approach is blunted.

Jamous and Peloille's study shows the great value of carrying out studies of professional process and professional knowledge. It would be unfortunate if the limitations of their theoretical framework should obscure the value of their analysis, and in the second part to this paper we hope to show how a rather more sophisticated version of their framework can be applied to understanding some recent developments within the British medical profession, and, in so doing, illuminate aspects of professional process that have hitherto been ignored.
In summary, and in conclusion to our discussion of Jamous and Peloille's approach, we would argue that professional process is characterised by continual interaction between the constituent groups that make up a 'profession'. These are not stable, nor consistent, but rather shift and re-form over time. Groups can be identified at any particular point in time by an ideology - a set of values, beliefs, assumptions, and ideas - that inform their understanding of the work they do, the characteristics of themselves and others, and the rhetoric of their debates. These ideologies are articulated around a set of critical dimensions, one of the most crucial of which is indeterminacy/technicality; others include superiority/inferiority, and autonomy/dependence. Running through these ideologies, and linking the particular points on the various dimensions that characterise them, is the notion of control, and it is control that we see as the touchstone to understanding professional process. The notion of control will be the basis of the introduction to the second part of this paper, where we consider the applicability of these ideas to understanding some recent events in British medicine.
4. Specialist Registration

As will have appeared from our discussion of Jamous and Peloille, and from the foregoing summary of our own position, training and recruitment are a major area where the problems of indeterminacy and social control are focused. We shall therefore take as one of our case studies a recent episode in British medical politics which concerned proposed changes in medical education - the profession's reactions to the Todd Report and subsequently proposed legislation. The crux of the issues that were involved was a change in the 'definition of competence' of doctors, and additional changes in their registration.

Before moving on to a discussion of the proposals themselves, we must briefly outline the position as it existed prior to the debate.

The Background to Registration

The 'definition of competence' to practise that was recognised in the Medical Act of 1958 was based on the assumption that a man would be sufficiently competent after just a few years' training. Since that Act, little has happened to change the basic definition of competence or its statutory recognition. Until the Act of 1950 the qualifying examination (i.e. the university examination or its equivalent) alone was enough to enable a trainee to be entered on the Medical Register. Since then an additional year of experience in hospital medicine - the pre-registration year - has also been obligatory. Postgraduate qualifications, although a de facto requirement for promotion within the hospital service, did not involve statutory recognition of a doctor's competence for specialist practice. Such recognition resided solely in selection to a post of consultant grade, and thus depended largely on processes of social selection. By the same token, a man could practise as a general practitioner without further
qualification (although many voluntarily took up traineeships). There was thus, in practice, a clear historical distinction between the relatively under-trained general practitioner and the highly qualified hospital specialist.

The Todd Report

A basic premise of the Todd Report was that the distinction between the specialists and the GPs would gradually weaken, to be replaced by a system of 'vocational specialties', each with its own requirements of particular skills and proper training (para. 55). In addition, it was felt that it was no longer possible to fit a young doctor for practice on the basis of his undergraduate course and one additional year's experience. The undergraduate degree should aim at a broader education, whilst at the postgraduate level, what was needed was 'proper professional training and recognition in each field, based on a common foundation of general professional training...' (para. 55).

What follows is a summary of the main recommendations for the development of such postgraduate work, and the ramifications of the aim for 'recognition' in a doctor's chosen field of practice:

1. After the Intern year there should be a systematic three years of 'general professional training', which would consist of 'a planned series of six-month or twelve-month appointments'. They would include areas of work that would be compulsory for some fields of work, and others that would be optional (para. 74-76).

2. The training itself should be 'vocational rather than academic in nature'; that is, the young doctor would practise as well as undertake further training (para. 78).

3. Trainees should be subject to continuous assessment - 'in the assessment of general professional training there is no place for a single major "pass or fail" examination (para. 93).
4. On successful completion of this period of training the trainee should be awarded a certificate. This should entitle the young doctor to membership of the relevant professional bodies (e.g. Membership of the Royal College of Physicians). A major effect of this would be the 'rationalisation of British higher professional qualifications and will make them more readily comprehensible to doctors abroad and laymen everywhere' (para. 98).

5. The young doctor would then be expected to go into a more narrowly defined area of interest. He would be expected to seek an appointment providing further professional training, in the course of which he would reach the point at which he would be judged competent to exercise a substantial measure of clinical judgement in his specialty without supervision' (para. 101). Such training would take place on the job, at the newly created grade of Hospital Specialist; this would be a career grade, with those of high ability going on to seek appointments as consultants (para. 103).

6. For General Practice, one of the appointments on general professional training should have been in general practice (para. 119). There should be a further two years spent as an Assistant Principal, when the trainee would be responsible to a Principal for the treatment of his patients. 'After satisfactory completion of his professional training the doctor would be competent to exercise independent judgement as, in effect, a "specialist" in general practice' (para. 121).

7. Just as present registration arrangements provided a means of identifying those who had gained an undergraduate training and some subsequent experience, so there should be 'a system of vocational registration as the necessary complement to a proper system of professional training'. It would signify that in the eyes of the profession, a man was sufficiently competent to exercise independent clinical judgement in his chosen field. It would also serve to identify to the public those doctors who had 'been recognised as suitable for full responsibilities of general practice' (para. 158).

8. The General Medical Council (GMC) should be the authority for vocational registration (para. 158).

9. Those who failed to gain vocational registration should be able to find employment in posts where guidance and supervision were available.

The Debate.

The Todd Report was published in April 1968, and received preliminary consideration by the British Medical
Association (BMA) in June of that year. The Medical Education Committee voiced reservations on what it saw as a rigid pattern of post-graduate training and registration; they saw dangers of a two-tier profession developing.

In early 1969, the BMA and the GMC began talks on vocational training and registration, during which the GMC gave assurances that any legislation would be preceded by full consultation with all professional bodies. Then, on 24th July 1969, the Secretary of State for Social Services (Richard Crossman) stated in the House of Commons that the Government intended to introduce the necessary legislation to enable the GMC to maintain specialist registers, and the establishment of a central body to administer post-graduate training. The issue came to a head when the BMA received a letter from the Chief Medical Officer at the Department of Health and Social Security in September 1969. The letter, which was dated September 8th, began by declaring baldly that 'The Secretary of State announced on 24th July the Government's recommendations that a system of specialist registration should be introduced'.

As a preliminary to the legislation, the letter continued, the GMC proposed that

1. The current (1956 Act) definition of competence be repealed. It was argued that to replace it with a new definition would be inappropriate - it would be 'difficult if not impossible to formulate with any precision and might in turn begin to appear unsuitable in a fairly short time'. The GMC consequently believed that its own terms of reference should be recast. Whereas its current duty, closely related to the prevailing definition of competence, was to maintain standards for basic registration, it should in future be couched in more general terms. It should be 'as a general duty to establish and maintain the standards of professional knowledge, skill and competence which are to be attained by persons seeking provisional, full, or specialist registration as the case may be ...'.

2. Along with the repeal of the standard of proficiency, specific references to 'qualifying examinations' be removed from the statutes. This would be in keeping with the GMC's earlier recommendations that had stressed the
importance of 'progressive assessment'; a person would thus be entitled to basic registration if he held a primary qualification and satisfied the requirements as to experience.

3. It repeated the GMC's intention of setting up specialty boards, administering them and providing a secretariat. To meet the administrative expense, the GMC proposed a scale of fees, including a higher retention fee for doctors registered in both the basic and the specialist register. (The level of payments was not specified.)

4. Erasure from the basic register would automatically mean erasure from the specialist register also. It was also proposed that in certain cases specialist registration might be cancelled or suspended without removal from the main register. It was stressed that it was intended to draft legislation as quickly as possible, and pressed the BMA for speedy consideration of the proposals.

The letter was greeted with consternation and protest. The legislation it outlined was seen as going far beyond anything that the profession at large had agreed to hitherto. It had come as a 'bombshell' said the Chairman of the BMA Council, and there were complaints that there had been insufficient time for the Todd Report to be considered in detail. Also, despite their assurances, it was felt that there had been insufficient consultation on the part of the GMC. In response to repeated protests, the CMO assured the BMA that there would now be no early announcement of legislation. As protest continued, the Secretary of State announced in November 1969 that in view of the doubts expressed by the medical profession he had decided to postpone legislation.

Having thus averted the immediate dangers, the BMA and GMC went on to consider the Todd Report fully in subsequent debates. In this account, we have selected some of the important issues and debating points and briefly reviewed some of the arguments that surrounded them.

The Royal Commission had repeatedly referred to a doctor achieving full clinical independence, and this aspect of the recommendations was seized upon, and it gave rise to many misgivings. It was feared that the final examination
would now fit a student for nothing. Indeed, it seemed doubtful if he would be justified in calling himself a "doctor" at all. At best it appeared to create a two-tier medical profession.

The problem of 'second-class doctors' was also frequently raised in relation to the possible failure of young doctors to gain registration on vocational or specialist registers. The problem in this instance was not simply that of young men and women who had not yet reached registration, but the possibility that some 'doctors' might remain debarred from practising and using their clinical judgement independently throughout their career.

Despite assurances from the Chief Medical Officer in a letter of November 1969 that the legal status of doctors and their rights to practise would remain unaffected, the misgivings continued unabated. The Report of the BMA Council to a Special Representative Meeting of 1970 noted that 'the Council emphatically disagree with Recommendation 32 of the Todd Report. The Council's view turns on a principle which the Association holds to be fundamental. This is that once a doctor is fully registered he is legally entitled to practise medicine independently in any field,' and the Council's recommendations included: 'That the stage at which a medical practitioner is regarded as qualified to practise his profession independently should be the date of full registration.'

It was ironic that in their avowed aim of weakening the division between the specialist and the 'second-class' general practitioner, the Royal Commissioners should have found themselves severely taken to task for creating second-class doctors. They had substituted a formally, and well-defined distinction between the 'two tiers' where before had existed the informal gradient of prestige differentially distributed through the profession.
It followed from the change in the definition of competence that the postgraduate training envisaged would be obligatory for all who aspired to achieve independent status within the profession. This was vigorously opposed. The BMA rejected any form of compulsion, and branded the proposed schemes as 'too rigid'. The element of compulsion was resisted - and was identified as an unwarranted bureaucratization of the training requirements. The matter was not amenable to determination or statute: rather, it was felt, it should be a matter for 'internal opinion and discipline within the profession'.

On the hospital front, the idea of specialist registers also raised the problem of 'what is a specialist?' in addition to 'what is a doctor?'. As was emphasised by spokesmen for the hospital service, the definition of a specialist depended on two intraprofessional processes - selection to a post by senior colleagues, and recognition and referral by colleagues thereafter. The legal definition of specialists, the formal requirements for specialist qualification recognised by statute, thus struck at this informal system of recruitment. The vested interests of the Royal Colleges in the selection process was also felt to be threatened, and the Todd proposals for certification were seen to devalue the Colleges' own systems of qualification. In substituting formal boundaries for informal recognition, the proposals also raised the problem of 'demarcation disputes' between the various specialty segments. The position of general practitioners who held hospital appointments and who might be working in a specialist area was also seen as problematic. In both cases the legal recognition of specialist competence was seen to go against the profession's principle that a man should be free to practise in any field of medicine. It also laid the practitioner open to charges of malpractice should he be found to have transgressed the formally prescribed boundaries of the specialty for which he was registered.
The role of the GMC in the proposed scheme is crucial. At the same time as the debate on education, the BMA were also engaged on heated discussion on the GMC's proposed retention fee of £2 - since increased to £5, and the subject of even more acrimonious debate. In this atmosphere any proposals emanating from or associated with the Council were likely to be treated with some degree of hostility or suspicion. A major bone of contention that had arisen in the debate over the retention fee was the composition of the GMC itself, and the long-standing grievance that it was unrepresentative of the profession as a whole. Specialist registration became one more element in this long-standing issue and it was widely argued that agreement to the GMC's projected role in postgraduate education could only be contemplated in conjunction with changes in the composition of the Council itself. For example, on 4th December 1969, the GMS Committee voted that:

'We do not accept that the vocational register should be maintained by the General Medical Council until there is (a) a revised constitution of the GMC to include a majority of members elected by the profession, and (b) a specialty board consisting predominantly of practising general practitioners nominated by their representative organisations.'

Many doctors saw the proposed changes as implying considerable encroachment on the part of the Council and a significant increase in its power. During the debate of the GMSC of October 2nd, it was pointed out that the wording of the Chief Medical Officer's letter seemed to imply that 'whereas the existing function of the GMC was to protect the public by maintaining standards for basic registration, it now sought to establish and maintain the standards of professional knowledge, skill and competence to be attained by persons seeking provisional, full or specialist registration' (our emphasis). It was questioned whether the GMC could possibly involve itself in these matters in such a way to initiate training and educational policy, and still remain an impartial watch-dog. The
increased power of the Council through its specialist registers was viewed askance, and despite its nominally independent status, the power of the State bureaucracy was seen to loom large behind the GMC as a statutory body. The increase in the Council's power was thus interpreted as an increase in potential Governmental control over the profession. The longer training period was also interpreted as a strategy by which the Government could seek to ensure more adequate staffing of the hospital service within the NHS. In short, any increase in the Council's powers was to be seen as the thin end of the State's wedge.

Discussion

If we consider this material in the light of the theory of Indeterminacy and Technicality, it is clear that the overall tenor of the Todd Report and the ensuing proposals was one of Technicality - or at least a marked decrease in Indeterminacy. This is illustrated by the Report's repeated emphasis on 'rationalisation' and ensuing accountability to the public. More specifically, we take it that a decrease in Indeterminacy is implied by the following features:

(a) At the undergraduate and postgraduate level, a decreasing emphasis on 'apprenticeship' learning, and training for immediate practice, towards a more 'general' education at undergraduate level and specifically designed training schemes for postgraduates. Although postgraduate training was to remain 'vocational' in nature, there was far more emphasis on the educational side.

(b) Greater emphasis on formal criteria of competence and a diminution of importance in informal rules of recognition by colleagues.

(c) An increase in the 'rationalisation' and bureaucratisation of the recruitment process.
(d) A corresponding increase in accountability on the part of the profession to public and statutory scrutiny.

The antecedents of the legislative proposals also bear close resemblance to the general features as outlined by Jamous and Peloille. Specialist registration had been largely supported by the Junior Hospital Doctors. As we have seen, there was no formal means of recognising the successful completion of specialist training. In pressing for specialist registration the junior doctors were thus attacking the process of social selection that left men with technical ability unable to practise their skills through an inability to find a post. They thus conform well to the Jamous and Peloille paradigm of pressure for change from occupational groups of low status.

Similarly, in seeking enhanced status as a group, the general practitioners sought to create and legitimate higher levels of determinate competence. Whereas under the prevailing situation, their position in the profession went largely by default - they were that segment that was not specifically trained for specialist practice - in seeking status of a 'specialty' they sought to create a well-defined area of 'specialist' training for general practice. It was therefore they who had vociferously supported the idea of vocational training. It is possible that they might also have supported the system of vocational registration as a formal legitimisation of their enhanced status.

In some respects, then, the Todd and GMC proposals met the demands of these two segments. Yet they both met the proposed changes with hostility. The junior doctors swiftly came to reject the idea of specialist registers, as did the entire BMA, whilst the general practitioners rejected vocational registration. They endorsed the proposed vocational training scheme, but came out against almost the entire 'package' of legislation.
The rejection of specialist registration is not hard to understand. Whereas it had been sought to decrease the power of the vested interests of the consultants, the proposed power of the GMC through the new registers in fact would have placed even greater control in the hands of the Royal Colleges and Universities, who dominated the Council. Thus not only did the educational changes become a token in the general struggle over the composition of the GMC, but in the eyes of the profession at large, the new situation would itself have nullified the changes brought about in the distribution of power over recruitment.

We can also see how the GMC might have increased its own control - again as we might predict from Jamous and Peloille - through one of the few measures that emphasised Indeterminacy. It was suggested that specific references to qualifying examinations should be repealed - and the role of the GMC in supervising undergraduate education be more broadly and more generally defined. Thus in doing away with one area of determinacy the GMC could extend its interests into a closer involvement in educational policy.

If the majority of members of the BMA had supported a measure of Technicality, they recoiled from those measures that appeared over-deterministic. In producing what were seen as 'second-class doctors' the proposed changes struck at an important element in the autonomy and self-administration of the profession. This is largely sustained by the claim of a 'community of colleagues' (which Goode has reified into an objective trait of 'professions'), wherein differentiation resides in intraprofessional and informal recognition. Similarly, the emphasis on public accountability, and the perceived threat of State control through the GMC and compulsory training schemes was interpreted as undermining the profession's autonomous position. The individual practitioner's independence was also under attack from these measures, and from the repeal of the definition of competence.
To summarise the position, then, it appears that although apparently conceding the looked-for improvement of status for the general practitioners and junior doctors, the legislation, which emanated from the centres of power - Whitehall, the Universities, the GMC and Royal Colleges - had retained a large measure of control for the vested interests of power. The overall Determinacy that was conferred was a two-edged weapon. Whilst for the majority of the profession it conferred some benefits, it threatened much more fundamental principles on which the status of the profession at large was founded.
5. General Practitioners' Remuneration

The next example we look at extends our model even further, as we turn to examine the crisis over General Practitioners' (GPs) pay and work which occurred in the mid-sixties. Looking at the various definitions of GPs work drawn from conflicting opinions of interest groups necessarily involves looking at each group's own assumptions and beliefs about General Practice. The ideology of each group reflects the relationship of that group to General Practice, a relationship which is articulated round a set of dimensions. Each one is open to negotiation and possible redefinition, so that the ideology of any one group never permanently crystallises. Rather, beliefs and assumptions are continually being challenged, the personnel within the groups changes, and 'external' factors also play an important part in keeping the situation fluid. Dimensions that are important in the relationship between the groups within the medical 'profession' are those of determinacy/technicality, and high/low status. Each involves areas over which a high degree of control is desired, over which there are no 'objective' rules to define the rights of each group, and so represent areas over which there is considerable dispute.

The situation we are using as our example developed between 1963 and 1965. Briefly, in 1963 the Review Body advised a 14% pay award to all doctors, but in practice the GPs received rather less on the whole because of their system of payment. Pressure on the BMA from disgruntled GPs forced them to form a special committee to make recommendations on the matter to the Review Body. The next award, however, issued in February 1965, took little account of these suggestions. The GMS Committee decided to take the matter further, advised GPs to withdraw from the Health Service, at the same time themselves preparing an alternative contract of work. By the end of that March, the Government were forced to agree in principle to the resulting 'Charter'.


The GP is an independent contractor in the National Health Service (NHS), contracted by the Government to carry out certain general medical services for the public. For this he is paid, although he owns his surgery, equipment, and himself pays any staff he hires, (unlike the hospital doctor who cannot withdraw from the NHS as he has no alternative place to practise, and owns no equipment, etc.). The GP can also carry out 'extra' work for hospitals and local authorities, for which he is paid by the Government, and can also practise privately. As such he has an independent status, which is the most important weapon for bargaining, for mass withdrawal of GPs from the NHS would result in the Hospital Outpatients Departments becoming flooded to the extent of being unworkable. This independence, however, also means that as a group GPs are less cohesive; central to their ideology is the belief that 'no GPs are the same', 'there is no such thing as an average GP', and this has led to them always demanding independence of speech and action. In the dispute that follows these factors play an important part.

GPs are represented on the British Medical Association (BMA), through the General Medical Services Committee (GMS Committee). This committee is composed of elected GPs from local medical committees and BMA branches. The BMA itself represents not only GPs but also all hospital doctors to the Government, negotiating through the Ministry of Health. Since the Government controls the public money, public opinion is less directly influential in the following events. We concentrate on four documents which, apart from being important in themselves, also represent stages in the negotiations.

The Review Body Award 1963

We take the starting point of the debate as being the 14% award from the Review Body. The pay award showed no differential in payment between hospital doctors and GPs.
Yet when the details were sorted out through the Pool system, most GPs received less than 14%. The Pool was calculated by multiplying the number of doctors by a fixed sum of money, and thus establishing a pool to which was added the expenses the practitioners as a whole claimed through their income tax returns. This was then divided by the numbers of the population in the NHS and produced the capitation fee per patient per year. Remuneration, then, was worked out for an average GP. GPs felt that this was an invalid method, as there was no average GP who did an 'average' amount of work; further, because of added complications (the Pool of that year was already overdrawn, for example), they in fact received less than 14% while hospital doctors received their full amount. The Pool thus offered them a subordinate form of assessment of their work, by offering less money. The 'crisis' began as a pay dispute, then, and one which centred around the Pool system.

At this time, increasing amounts of money were being invested in hospitals, in research, building, and equipment, to which GPs were denied access, while very little was being spent on the general medical services. There was an increasing discrepancy between the type of medicine a doctor was taught in hospital and that which he could subsequently practise as a GP. The number of doctors entering was decreasing, and with a growing population, this meant that GPs were dealing with larger and larger lists. More time was spent filling in forms and dealing with administration, (for example, with all social benefit requests). The GP was becoming 'master of the fountain pen' rather than a practising physician, offering the personal service of the family doctor ... the area in which GPs claimed to possess special expertise.

GPs felt that their work was being undervalued. The differential in award payment between hospital doctor and GP led the GPs to consider their work and conditions
in greater detail. At local BMA meetings they were unusually vocal about their misgivings with the Pool system, and representatives requested action at national GMS Council meetings. Discussion also went on between the GMS Council and various Consultant Committees, and led eventually to agreement that GPs might warrant special consideration in this instance.

As a result, a special group, a Joint Evidence Committee (JEC) was formed, whose duty it was to make recommendations on behalf of the GPs to the Review Body prior to the next award. The members of the Committee were drawn from the BMA Council, the Joint Consultants Committee, and the GMS Committee, the latter providing the only GP in the group. Later, when GP representatives met for a special BMA meeting to consider a draft of the JEC's report, they insisted that additional evidence be included to show that recruitment to General Practice was inadequate and diminishing, and that an additional GP should be included on the committee. Taking this as a vote of no confidence the Chairman of the GMS Committee, a firm supporter of the Pool system, resigned. His successor, Dr. Cameron, stated that GPs were more concerned with looking at conditions of work than memoranda on pay. Thus the change in personnel of the GMS Committee reflects a shift in emphasis of the debate.

The Joint Evidence Committee Report

The JEC report submitted that 'there should be a radical change in the value placed upon the general medical services'. Although never actually making the status differential between GP and hospital doctor explicit, the report is couched in language indicative of their differences. It discussed the difficulties of GPs, though mainly in terms of lack of relative financial recognition. Expenses for outside work were drawn from the Pool, at that time, so that the more outside work done the less there was left in the Pool to be divided into capitation fees for the
general medical services. Yet it was this work around which the GPs saw their expertise as existing. The recommendations of the JEC report, however, did not offer any serious alterations in this area. They suggested that GPs earnings should be assessed solely in relation to general medical services, and that outside work expenses should not be subtracted from the Pool.

The Committee did suggest that GPs should receive additional payments if they satisfied certain conditions as to seniority and payment. In this respect it recognised the GPs claim that it was the person offering the service who was important, and that the GP himself had expertise and skill which would increase with experience, and merited reward as in hospital services. The other recommendations, on the other hand, were merely tinkering with the Pool system, of which the original concept still remained. This is perhaps no surprise from a Committee where GPs were outnumbered by the Consultants three to two. No alterations were made to the type of work the GP had to do, or to the conditions in which he did his work. No attempt was made to make his situation closer to that which existed in the hospital, or to increase his expertise in any way.

The Joint Evidence report was submitted to the Review Body in June, but no attention was paid to it except in the BMA's journal, the British Medical Journal (BMJ), with only two letters published relating to the evidence submitted. About this time, however, the Fraser Working Party, a Government party set up to consider conditions of work in General Practice, invited evidence from groups of GPs. At the same time local medical committees and BMA branches also asked members to think out their complaints and difficulties and to send them up to the GMS Committee. This offered GPs a sense of personal involvement in the dispute and had the effect that issues other than pay began to be discussed as well. The GMS Council
started a newsheet, called 'The Voice', which was sent to all GPs in the NHS; this was instrumental in getting official policy down to the grass roots level. The debate over a GP's work and working conditions was thus stimulated by the number of discussion documents which were being circulated, right up until the time of the next Review Body Interim award, due early in 1965. Also important, the negotiating body itself changed - a Labour Government was returned in January 1965.

The Review Body's Interim Award

This award was published on February 8th 1965. The report stated that it saw the issue as one of status differences between hospital doctor and GP, but implicitly condoned the situation by advising an award which in no way reduced this disparity. It did not consider the GP's work had become more complex and would not award money on those grounds. The £5.5 million which it did feel justified in giving was offered because GPs were decreasing in number and having to deal with an increasing work load; the money was given, however, with the proviso that most of it must go towards a partial reimbursement scheme for practice expenses. The Review Body agreed that some outside work should not be included in Pool calculations, such as local authority and hospital work, but defined maternity work and eyesight testing as part of the general medical services. The report rejected payments for seniority on the grounds that the GP's relationship with the Government was 'contractual rather than professional salaried' but suggested instead that a small sum should be set aside for merit awards.

GPs would gain little from this award, and what little was suggested in the Joint Evidence recommendations was rejected here. The importance of 'outside' work was decreased, but the type of work and conditions of service still pertained. The structure upon which the GP's pay was based was unaltered; the hospital/GP division still existed throughout. Further, a merit award system suggested that
the work, not the doctor should be assessed, and that his work should, and could, be objectively measured.

Reaction to the award was strong. The profession had previously stated that it would accept the Review Body's recommendations; to reject them the GMS Committee would have to have the support, not only of GPs but also of other medical negotiating bodies. The Medical Practitioners Union, a vocal minority of GPs, had already indicated prior to the Review Body's award that if the recommendations were not satisfactory they would not hesitate to advise their members to withdraw from the NHS. The GMS Committee was thus pressurised from this quarter to consider using their ultimate bargaining device, mass withdrawal, to achieve a more satisfactory contract of work for General Practice. At a meeting held shortly after the Review Body Interim Award was announced, the GMS decided to withdraw cooperation from the Fraser Working Party, a vote of no confidence in the Government was recorded, and GPs were advised to withdraw their services from the National Health scheme, and send their undated resignations to the BMA's Union, the British Medical Guild. The Central Consultants and Specialists Committee also issued a statement in support of the GMS Committee's action. The BMA, representing the profession, in other words, put up a united front.

The GMS Committee clearly needed a majority support in the issue, which brought out strong feelings and a great diversity of opinion from other interested parties. The Lancet, for example, typically a journal for consultants, offered very different views from their 'official' representatives. In their leader for the week of the Review Body report, they supported the award, suggesting that it had 'taken the first steps towards reducing some of the worst anomalies in the method of remuneration', and adding that the GPs should be 'grateful'. 'The Times' (February 9th) also gave support through both its leader and various letters published. The recommendations, it said, 'if looked at temperately, are sound' and would reward good and enthu-
astic medicine. The letters in the correspondence column tended to emphasise the difficulties of the GP, both in their duties and through lack of pay. Many did not support the resignation, however, but offered constructive criticism, giving alternatives of how they might organise their work, giving their own personal re-definition to the situation. The Lancet, having advised GPs not to withdraw from the NHS because it would 'injure the profession and impair its standing with the public' (20th February) received many letters from GPs who accused the journal of trying to split the profession at a time when total support for the GP was needed. The editors replied that 'it would be strange if in a democracy ... the opinions of an apparent minority were to be withheld for the greater comfort of the majority' (February 27th). The specialist journals do not usually include any polemic; on this occasion, though, the Practitioner, one of the journals for GPs, had a short article criticising the Ministry of Health and the BMA for not getting down to consider conditions of work in General Practice, and suggesting that the BMA had falsely represented GPs in the past by always concentrating on the minutae of pay problems (February 1965).

By the beginning of March the BMG had received 17,000 resignations, and was thus assured of the support of the majority of GPs. An alternative contract was drawn up by four members of the GMS Committee, not from scratch it appears, but using the vast numbers of reports which the profession had received from GPs at all levels in the hierarchy. The opinions and criticisms of all GPs, then, was meant to be represented in the 'Charter for the Family Doctor Service' which was published on 9th March.

The Charter for the Family Doctor Service

The Charter did what previous reports had failed to do, and that is offer a completely new definition of General Practice. The Pool system was no more, and the pay structure was more closely related to the amount and type of work
each GP carried out - although capitation was maintained. The amount of administration was cut down, by reducing, for example, the amount of certification the GP should be liable for. GPs were offered a 'mini-hospital situation' allowing Government money for auxiliary staff, nurses, secretaries, etc., and it was also suggested that money for equipment should be reimbursed. The personal service of the GP was emphasised, and the experience of the GP as a family doctor, who offered a very special one-to-one relationship over time, was central to the Charter. 'If General Practice is to stay a worthwhile branch of medicine it must enable doctors to use their skills to the best advantage of their patients. It must also ensure that their energies are not wasted on work that can be done by others'. Further, the GP was encouraged to continue his training through attendance at refresher courses and vocational training. To maintain his independence, the Charter writers suggested that an independent financial corporation should be set up to deal with money lending for surgeries, equipment, etc.

The Charter was offered to the Government as an alternative contract for General Practice. With the BMG holding now over 17,000 undated resignations, the Minister of Health reported back to the GMS Committee within a fortnight that he would accept the Charter in principle, although he wanted to negotiate each suggestion separately. Thus began another series of negotiations which were finally completed in 1966. The charter then went before the Review Body to actually fix the salaries, and as this was being completed, a wage freeze prevented it from being immediately implemented.

Discussion

What we have been considering here is a debate involving different groups connected with the medical 'profession'. Starting with a pay dispute, we end finding General Practice redefined, and in a considerably stronger position vis-a-vis other interest groups. What happened? How can we use Jamous and Peloille's theoretical approach to interpret the
events? General Practice, at that time, contained areas of work which we would define as 'determinate' and predictable in content - with much administration and routinised tasks of preventive medicine for example. It was organised around a pay scheme which was based on the concept of an 'average' GP, implying work which needed little personal expertise. All this lessened the validity of the GP's claim to offer a more esoteric form of medicine.

The first reports recommended changes which in no way altered the determinacy of the work, and did nothing to increase the control of the GPs within the 'profession'. The groups involved in making these earlier recommendations were 'outsiders' to General Practice. Each suggested a redefinition of the situation in a way which reflected his beliefs and attitudes towards General Practice. It was in the interests of both Review Body and the Joint Evidence Committee (this latter composed predominantly of consultants) to continue to see GPs as 'second class doctors' and not to attempt any changes which might alter the situation. By accepting the status differential between hospital doctor and GP in a taken-for-granted manner, and concentrating on the minutae of pay changes in General Practice, the various parties thus protected their own position in relation to General Practice.

Only by manoeuvring themselves into a politically dominant position were GPs able to redefine General Practice so as to make practice and ideology more congruent. Once in this situation, GPs were able to attack the assumption, imposed by others, that they were an inferior form of clinician. As noted before, the area of indeterminacy of an occupation, or a branch of that occupation, is a highly regarded area which contains the specific expertise and esoteric knowledge of that branch. Thus the Charter for the Family Doctor Service saw certification and other minor 'chores' as amenable to delegation. GPs should concentrate on the service for which only they possessed expertise and the experience, that of dealing with patient interaction in
a one-to-one relationship offered in General Practice. The clinical skills and vocational training necessary for GPs were outlined in detail, thereby increasing the emphasis on work we would define as 'indeterminate'.

The Charter also attempted to reduce the status difference between hospital doctor and GP, by suggesting that the GP, as a specialist, should have access to hospital equipment and facilities. By advising an independent financial body to be formed to deal with the details in General Practice, the independent status of the GP was also maintained. Thus all round GPs ended up by being in a position which was considerably stronger than before. They had gained areas of control through increasing the indeterminacy of their work in many ways, and they had attempted to define themselves as a higher status doctor.

Lastly, organisational constraints must not be forgotten. What we have presented here is very much an 'official' picture. Our data has consisted mainly of reports of meetings of various committees, and discussions with 'official' committee members. We do not feel, however, that looking at the situation like this incurs distortion of the events, but rather the distortion occurs in the structure of the profession. Rather than GPs defining General Practice, we see the GMS Committee negotiating on their behalf. It is necessary when studying professional ideology, to remember than changes in its beliefs and attitudes reflect the interests of the negotiators in control. This group of 'elite' Committee doctors represent a large number of members whose attitudes and values are meant to be in harmony with their representatives. The extent to which they may not be is seen in the example of the Lancet's opinions vis-a-vis the Consultant Committees, or an up-to-date example, in the present debate over the function of the GMC.

To say the debate revolved around indeterminacy and technicality is to give the situation a very limited, and
we think, inaccurate understanding. Control exists not only along this dimension, but on other variables also. Jamous and Peloille's theoretical approach certainly appeals; it adds an important variable which helps us understand the structure of an occupation, the areas over which it seeks control, and the process whereby it attempts to gain further power. Only when combined with other variables, however, does it gain real validity in studying professional process.

6. Conclusion

Jamous and Peloille have made a significant contribution to the sociology of the professions. In particular, their introduction of the concepts of indeterminacy and technicality to the study of the medical profession has illuminated important aspects of the content and nature of "professional knowledge". By using these two concepts we are able to look at ways in which those who call themselves professionals see and understand their work.

The definition of indeterminacy which Jamous and Peloille offer, is, we feel, unsatisfactory, and the meaning of the term remains unspecific throughout the paper. We have argued that the difficulties which exist in understanding the meaning and usage of the term are related to the way in which their approach is intended to cover two rather different requirements in the study of the professions. First, Jamous and Peloille wanted to develop a definition of occupations, and what is characteristic of a 'profession'. This would give their study an objective criterion. The second intention was to provide a framework for looking at professional process from a historical perspective, by looking at events which surround the development of a profession.

In our discussion of their approach we suggested that these two aims were not only distinct but that they were
even not necessarily complementary. Indeed, we feel that their first aim was not only unsuccessful in terms of their intentions, but was also misconceived. Like many positivist predecessors, they have reified a concept in such a way as to limit its actual interpretive value. On the other hand, the concepts of indeterminacy and technicality do prove to be of great value in the examination of professional process, and we have used them to this end in our two case studies. The problem of the definition of 'indeterminacy' is not fully resolved in this paper, however, and needs further analysis. It is clear that it refers to an area of 'private' knowledge, but the exact limits of this area are hard to draw, a task exacerbated by the very indeterminacy we seek to comprehend.

With this reservation made, however, Jamous and Peloille's approach to the study of professions suggests a new element in looking at professional process, and, in so doing, a way of coping with aspects of professional ideologies that had not been previously available. As such, it can be regarded as a contribution to a 'middle range' of concepts that are used in looking at professions and professional process.

Our analysis and subsequent elaboration of Jamous and Peloille's study suggests that there are three levels of abstraction that are used in studying professions and professional process. At the first level are the particular methods of training and recruitment, the mechanisms of pay, and other organisational and institutional activities that characterise the way that those who see themselves as professionals actually work. At a second level of abstraction, less closely tied to the immediate realities of day-to-day life, is the 'middle range' that Jamous and Peloille's notion of indeterminacy and technicality contributes to. Here, in addition to their concept, other important variables that can be used to understand professions and professional process include autonomy and
dependence, and hierarchy and egalitarianism. At a further, yet more general, level of abstraction, lie concepts like those of power and control. In essence, our argument is that these latter fundamental features underlie the mechanisms that characterise 'professional' activities and the development of 'professions', but are mediated through important distinctions of which that between indeterminacy and technicality is central.  

In the first of our case studies, that on the dispute over specialist registration that took place between 1969 and 1970, we have demonstrated the way in which the dispute which at one level is to do with methods of training, recruitment, and registration, is, at another, very much concerned with notions of determinacy and indeterminacy. But, as our analysis goes on to show, such an explanation would be insufficient and needs to be also understood in terms of the more general concepts of power and control. Similarly, looking at the dispute over the payment of General Practitioners which took place between 1963 and 1966, we have deliberately chosen the situation where notions of indeterminacy and technicality are far more peripheral to an understanding of what took place - though they are far from irrelevant.

Jamous and Peloille's contribution lies not in providing a new framework for understanding professions, but rather in providing new concepts that, together with others, do form the basis of a useful interpretive scheme. Jamous and Peloille's hankerings for an'(unrealisable) 'objectivity' in the study of professions and professional process must not lead us to ignore the substantial and important contribution that their ideas have made.
References


Freidson, E., (1972), Profession of Medicine, Dodd Mead: New York.


Marks, J., (1972), The Conference of Local Medical Committees, Trustees of the G.M.S. Defence Trust.


Footnotes

1. We would thus question the relevance of ideas such as 'intrinsic' versus 'extrinsic' in the history, sociology and philosophy of science, and would reject Ben-David's distinctions between the conceptual, and the institutional or interactional outlined in his *The Scientist's Role in Society*, (1971).

2. Even Hughes implies there is some objective reality to a profession, just as Jamous and Pelouille do later, and fails to fully work out the implications of rejecting the relevance of the question, "What is a profession?". Although an important issue this is not further considered here: in using the term 'profession' we refer to a socially constructed reality, for professions exist to the extent that people believe them to exist.


4. It has been applied to the understanding of events in politics (C.B. MacPherson, 1961) and medicine (H. Eckstein, 1960, and A.J. Willcocks, 1967), and more recently, as used to look at the relationships between dominant and subordinate groups in various contexts (see 'The Politics of Perception', Hudson and Sheldrake, 1972).

5. This framework is along the lines of a distinction between a conscious model, the actors' definitions of the situation in terms of money, training schemes, etc., and an unconscious model, our definitions in terms of power and control. In this, concepts like indeterminacy and determinacy, autonomy and dependence, etc., act as mediators between our model and that of the participants themselves.
Appendix 5: A parallel study of segmentation and students' experience

Since the publication of some of the results of the questionnaire study reported in Part 2 of the thesis, a very similar study has been launched in the University of Cincinnati College of Medicine, under the direction of Dr. Jay Gibson. The questionnaire that he has used has a number of points of similarity with my own, and the results from Cincinnati show a number of parallels with those from the Edinburgh study. This appendix reproduces a working paper prepared by Gibson in which explicit comparison is drawn between the two studies. I must acknowledge my grateful thanks to Jay Gibson for his kind permission to reproduce his paper here.
SOME COMPARISONS OF SOCIAL ENVIRONMENTS
IN CLINICAL TRAINING*

Research Report #1
from the
Spring, 1975 Survey of
Third Year Medical Students

Jay Gibson
Principal Investigator
Clinical Experiences Project

June, 1975
University of Cincinnati College of Medicine

*Pre-publication draft - not for citation without permission of author.
This is a brief report of one part of the data collected in the Spring, 1975 Survey of the Clinical Experiences research project. The broad aim of this project is to contribute to the knowledge about the impact of medical school experience on medical students. This report includes an overview of both the project and the Spring Survey as well as some highlights of the findings compared with similar data from a study conducted at the University of Edinburgh Medical School.*

The Clinical Experiences Project

The Clinical Experiences Project is a research effort designed to study some aspects of the structure and process by which medical students selectively acquire the skills, knowledge, attitudes and values of the physician role. More specifically, it is focused upon the nature of the social and psychological environment constituted by the medical school (Merton et al, 1965). As in the case of any complex phenomena, many aspects of this social environment could be chosen for study. It was decided that initial research in this project would be directed towards an examination of some of the roles and role relationships contained within the social environment of the medical school.

Much of the research in this area has been concerned with understanding the medical school as a single social unit. At least three major studies have made important contributions. Each of these studies provides a different view of the medical school as a social system as evidenced by the role of the student within it. Findings from the Cornell study (Merton et al, 1957) report the medical student as a "student-physician" - an apprentice, junior colleague of the medical team who is being nurtured towards full professional status.

*The author is indebted to Paul Atkinson, University College, Cardiff, for his generous cooperation and assistance in the development of this research.
as soon as possible. Becker et al (1961) report that the students at the University of Kansas are "boys in white" - clear subordinants relative to the faculty. They appeared to be students (or observers of medical practice) engaged in an obstacle race to their degree. Findings from the study of the Downstate Medical Center in New York (Bloom, 1971) tend to corroborate the findings at Kansas with students in clearly subordinant roles and faculty-student relationships described as ones of mutual indifference and hostility. Since the basic elements of any social system are roles and statuses (as well as the relationships between these roles and statuses), the kinds of roles and the ways in which they are defined are seen as being important indicators of the social system or environment in which they exist. In terms of the three studies briefly outlined above, this suggests that there are differences in the social environments between these three different medical schools.

If, as suggested above, there are distinguishable social environments between medical schools, it would also be reasonable to suspect that there may also be differences within a given school. However, little research has been reported which examines this proposition. One such study has been reported (see Atkinson, 1973) which does tend to indicate rather clear differences within one medical school. As part of the task of better understanding the impact of the medical school experience on students (as well as their subsequent professional work), increased systematic study of the different social environments within a medical school may provide a potentially useful contribution. While the reality of personality and other individual variables is important, it is also important to examine the influence of these social environment realities as factors in directing social behavior. The general logic of this research is that differences in social environments within a medical school will be reflected in a variety of role and role relationship
differences in addition to that which can be accounted for by individual differences.

The SPRING, 1975 SURVEY

This initial part of the Clinical Experiences Project was conducted to answer questions about the existence and nature of the similarities and differences between the social environments comprising the student's clinical training. The environments examined include that of the Medicine and Surgery Clerkships. Aspects of students' experiences in these two clerkships include students' role perceptions and students' perceptions of the student-teacher role relationship.

It should be pointed out that this report examines only one part of a rather large body of data which was collected. Subsequent research reports will examine other aspects of the data obtained in the Spring, 1975 Survey.

One part of this survey was a replication of research conducted by Paul Atkinson (1973), a British sociologist at the University of Edinburgh. In part, this study was explicitly formulated to examine role and role relationship similarities and differences between medical and surgical aspects of the students' clinical training. Data in this research report provide for a comparison of findings between the University of Cincinnati study and that which was conducted at the University of Edinburgh.

Procedure

The Spring, 1975 Survey employed a pencil-and-paper questionnaire which was distributed to all third year medical students at the beginning of the spring term. Each student who had completed his or her first three clerkship quarters received an explanation of the project and was asked to sign and return a form indicating his or her consent to participate along with the completed questionnaire. A total of 65 (out of 106) questionnaires were completed.
and returned in such time and condition to be included in this report. This represents a return rate of 61.3%. This was a very good return rate by current standards in survey research. It should be pointed out that any substantial non-return rate may influence the results of a study and conclusions must be qualified with this potential pitfall in mind. Similarly, the Edinburgh study utilized a questionnaire survey (in addition to other methods). The questionnaire was completed by 112 students (slightly less than 80% of the class) following their attachments in medicine and surgery in 1972.

In the University of Cincinnati survey, students were asked to describe their experiences for only those clerkships which they had completed. Because of the staggered rotation schedule, this meant that 49 of the 65 students who returned a completed questionnaire had completed the medicine clerkship and 52 had completed the surgery clerkship.

RESULTS

Student Role Perceptions. As indicated above, at least three different student roles have been identified (apprentice, observer, student) which are thought to be indicators of differences in social environments. One item examined which of these was perceived by the students as the most accurate description of their roles in medicine and surgery. In both the present study and the Edinburgh data, a clear distinction was evident between perceptions of the medicine and surgery roles (see Table 1). In each case a majority of students described their role in medicine as "apprentice" while a majority of students described their role in surgery as "passive observer."

If, as suggested above, there are social environment differences between these two experiences, then it is reasonable to expect that these differences might also be indicated by differences in other role related aspects such as
the students’ relationships with patients. Another question asked students to indicate the ease or difficulty with which students formed relationships with patients (see Table 2). Once again there are large, clear differences between students' reports of medicine and surgery: 84% indicating "no difficulty at all" in medicine as compared with 52% in surgery. While the magnitude of response to each category of this item is somewhat different, the present study data trends are quite similar to that of the Edinburgh study. These results are interesting in that if ease of forming relationships with patients was primarily a characteristic of an individual (rather than social environment).

<table>
<thead>
<tr>
<th>Table 1. Students' Reported Self-Perceptions</th>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Apprentice</td>
</tr>
<tr>
<td>Passive Observer</td>
</tr>
<tr>
<td>Student</td>
</tr>
<tr>
<td>N =</td>
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<table>
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<tr>
<th>Table 2. Reported Ease in Establishing Relationships with Patients</th>
</tr>
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<tr>
<td></td>
</tr>
<tr>
<td>Considerable difficulty</td>
</tr>
<tr>
<td>Moderate difficulty</td>
</tr>
<tr>
<td>Slight difficulty</td>
</tr>
<tr>
<td>No difficulty at all</td>
</tr>
<tr>
<td>N =</td>
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</table>
then one would not expect to find such large differences between the clerkship experiences. While it is clearly a rough approximation, the data in Table 2 do tend to suggest some social environment influences contributing to a determination of the ease with which students make relationships with patients.

In this same regard, one further question was asked: how students' believed that patients would describe them on the medical and surgical wards (see Table 3). The differences obtained were not as large as in other tables (above), but do indicate some trends. Almost half of the students in medicine (49%) as compared with 32% in surgery indicated that patients would describe them as "Doctor". More than half (54%) of those in surgery as compared with 41% in medicine indicated "Junior Doctor". The primary distinction would appear to be between "Doctor" and "Junior Doctor" rather than between "Junior Doctor" and "Student" as was the case in the Edinburgh study. While the role labels are different, the status difference between "Doctor" and "Junior Doctor" and "Student" are quite similar.

<table>
<thead>
<tr>
<th></th>
<th>U.C. Medicine</th>
<th>Edinburgh Medicine</th>
<th>U.C. Surgery</th>
<th>Edinburgh Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>49%</td>
<td>*</td>
<td>32%</td>
<td>*</td>
</tr>
<tr>
<td>Junior Doctor</td>
<td>41%</td>
<td>63%</td>
<td>54%</td>
<td>38%</td>
</tr>
<tr>
<td>Orderly or Nurse</td>
<td>4%</td>
<td>1%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Student</td>
<td>4%</td>
<td>32%</td>
<td>6%</td>
<td>52%</td>
</tr>
<tr>
<td>Don't know what</td>
<td>2%</td>
<td>9%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>to make of me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N =</td>
<td>49</td>
<td>112</td>
<td>52</td>
<td>110</td>
</tr>
</tbody>
</table>

*This category was not included on this item in the Edinburgh study.
These three items taken together suggest some distinctions between the social environments of surgery and medicine. In the medicine clerkship, students tend to see themselves primarily as apprentices – junior colleagues – as compared with students in surgery describing themselves as primarily being observers. Related differences include greater reported ease in establishing relationships with patients and the higher status patient description of "Doctor" rather than "Junior Doctor" or "Student." As compared with the surgery descriptions, it would appear that students in medicine report themselves to be more nearly junior colleagues than is the case when in surgery.

**Student-Teacher Role Relationships.** Students were asked two questions regarding their relationships with faculty and house staff on both services. The first question asked about the extent to which faculty and house staff got to know the student personally. The second question inquired about the extent to which faculty and house staff had developed a close knowledge of the student's work and abilities.

<table>
<thead>
<tr>
<th></th>
<th>U.C. Medicine</th>
<th>Edinburgh Medicine</th>
<th>U.C. Surgery</th>
<th>Edinburgh Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely</td>
<td>41%</td>
<td>25%</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Perhaps one or two</td>
<td>31%</td>
<td>23%</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>No, none did</td>
<td>27%</td>
<td>52%</td>
<td>71%</td>
<td>68%</td>
</tr>
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</table>

As can be seen in Table 4, there is a clear difference between students' reported perceptions of whether faculty knew them personally when one compares responses of medicine with surgery. It should be noted that while the overall
trends are somewhat similar between the present study and the Edinburgh study, the distributions indicate greater similarity for surgery. There is a rather large difference between the distributions when one examines the data from medicine. Considerably more students indicated "Yes, definitely" or "Perhaps" in the current study (72%) as compared with 58% from Edinburgh.

Table 5. Extent to which students were personally known by House Staff

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<thead>
<tr>
<th></th>
<th>U.C. Medicine</th>
<th>Edinburgh Medicine</th>
<th>U.C. Surgery</th>
<th>Edinburgh Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely</td>
<td>80%</td>
<td>57%</td>
<td>58%</td>
<td>35%</td>
</tr>
<tr>
<td>Perhaps one or two did</td>
<td>18%</td>
<td>12%</td>
<td>27%</td>
<td>31%</td>
</tr>
<tr>
<td>No, none did</td>
<td>2%</td>
<td>32%</td>
<td>15%</td>
<td>33%</td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>60</td>
<td>52</td>
<td>51</td>
</tr>
</tbody>
</table>

With regard to house staff (see Table 5), a similar trend in the data appears as in the case of the faculty. However, the magnitude of the responses in each category is greater. More students (80%) believe themselves to have been personally known by medicine house staff than those in surgery (58%). Both of these groups represent a substantial increase in this category when compared with the Edinburgh students.

Table 6. Extent to which faculty developed a close knowledge of students' work and abilities

<table>
<thead>
<tr>
<th></th>
<th>U.C. Medicine</th>
<th>Edinburgh Medicine</th>
<th>U.C. Surgery</th>
<th>Edinburgh Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely</td>
<td>35%</td>
<td>14%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Perhaps one or two did</td>
<td>39%</td>
<td>27%</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>No, none did</td>
<td>27%</td>
<td>59%</td>
<td>79%</td>
<td>82%</td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>60</td>
<td>52</td>
<td>50</td>
</tr>
</tbody>
</table>
In response to the second question regarding the extent to which faculty and house staff developed a close knowledge of students' work and abilities, both the comparison of medicine with surgery and that of the present study with the Edinburgh data are to be noted. As was pointed out in Table 4 (above), the distributions between Edinburgh and the present study are quite similar with regard to students' reported experience in surgery. While a large portion of the students (79% and 82%) reported that none of the faculty in surgery developed a close knowledge of their work and abilities, the distributions with regard to experiences in medicine are clearly different but vary between the present study and the Edinburgh data. Most students (59%) report that the medicine faculty did not have a close knowledge of their work at Edinburgh which compares with only 27% so indicating in the present study.

Table 7. Extent to which house staff developed a close knowledge of students' work and abilities

<table>
<thead>
<tr>
<th></th>
<th>U.C. Medicine</th>
<th>Edinburgh Medicine</th>
<th>U.C. Surgery</th>
<th>Edinburgh Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely</td>
<td>71%</td>
<td>42%</td>
<td>37%</td>
<td>24%</td>
</tr>
<tr>
<td>Perhaps one or two did</td>
<td>27%</td>
<td>28%</td>
<td>46%</td>
<td>20%</td>
</tr>
<tr>
<td>No, none did</td>
<td>2%</td>
<td>30%</td>
<td>17%</td>
<td>56%</td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>60</td>
<td>52</td>
<td>50</td>
</tr>
</tbody>
</table>

As illustrated in Table 7, there is again general agreement between Edinburgh students and those of the present study with regard to their experiences in surgery. When comparing these data with that on the faculty in Table 6, a somewhat inverse relationship is noted: more students believed that surgery house staff knew their work and abilities than did the surgery faculty. Again there is considerable divergence between Edinburgh data and the present study with regard to students' experience in medicine. Two percent
of the students in the present study compared with 30% in the Edinburgh study believe that house staff in medicine did not develop a close knowledge of their work and abilities.

Summary

This present research report is necessarily limited. It has been focused upon a comparison of students' reported experiences in medicine and surgery, with the purpose of describing some of the similarities and differences in their respective social environments. Such differences and similarities in roles and role relationships have been identified. It is inferred that these distinctions indicate the presence of different social environments within a medical school as well as the differences suggested above with regard to different schools. Some additional support for this has been offered vis-à-vis quite similar findings from another medical school.

The reader should be cautioned against an implication of causal sequencing between variables reported in this paper. Such implications appear unwarranted at this time. Analyses building towards such an explanatory system will be reported in subsequent papers.

It appears to be clear that there are some interesting differences between the social environments in medicine and surgery. Many questions remain to be answered with regard to both these and other descriptive elements well as with regard to some explanation of the differences. One potentially useful explanation is that the kinds of distinctions noted reflect important requirements of different specialties. The reader might keep this possibility in mind when making his or her own interpretation of these data.
Brief Note on Statistical Tests

No information with regard to statistical tests of significance are reported for the data presented in this paper. This reflects a decision by the principal investigator regarding the inappropriateness of this kind of formatation at this point in the research. There are at least two reasons for this decision. One is that for the most part the differences reported in this paper are sufficiently large so as to make tests of significance only of academic value. Secondly, and perhaps more importantly, such tests might prematurely limit some areas of exploration. Since this project is at a very early, tentative stage of development, this appears to be an desirable procedure.
References


