EVIDENCE AND JUDGEMENT

THE SCIENTIFIC AND THE HUMANE IN THE GOOD DOCTOR

by

Rosemary Jane Macnaughton
MA, MBChB, MRCGP, DRCOG

A thesis for the degree of Doctor of Philosophy
submitted to the Faculty of Arts
University of Glasgow
September 1998

ACKNOWLEDGEMENTS

I would like to acknowledge advice and support from a number of colleagues. In particular, I have benefited from joint projects with Professor Frank Sullivan and Dr Blair Smith. Professor Graham Watt gave me time to develop and run the philosophy special study module, and colleagues in the Department of Philosophy assisted in the teaching of the students. Michere Beaumont has given invaluable help with typing and word processing.

I have been much influenced by a small number of books which were seminal for the development of my ideas. These I have listed in my select bibliography.

My family have been supportive in this as in all my previous academic projects, and I am especially grateful to my parents for looking after my dog, Hobbes, while I was at work. Friends, particularly Dr Evelyn Miller, who has been through this process herself, have provided help, advice and distraction.

I cannot imagine having had a more willing or supportive supervisor than Professor Robin Downie. He has put up with my need for tutorials at odd times without complaint. His enthusiasm for my subject has meant that I still feel excited by our discussions on the thesis as work on it draws to a close. I cannot thank him enough.

Finally, I must thank my patients, who were the unwitting stimulus for the questions this thesis attempts to answer. I hope that having grappled with these problems I may develop into the 'good doctor' they deserve.

SUMMARY

There is a widespread view in medicine and amongst the general public that modern medicine is primarily a scientific enterprise and that the activities of clinicians rest on a secure basis of evidence-based science. As a clinician with a first degree in the arts, I have felt instinctively that this was not wholly the case. This thesis will examine the scientific nature of medical practice, identify and analyse what else is required, apart from science, for someone to be a good doctor, and suggest ways in which these additional attributes might be developed in medical education.

I shall begin by examining the scientific evidence-base of medicine. It will emerge that there are three aspects to medical science: firstly, systematic knowledge of the systems of the body and their pathology, secondly, qualitative research, and thirdly, randomised controlled trials. Of the three only the first is truly science, but since science is a large family, the randomised controlled trial and qualitative research can be seen as members.

Assuming, therefore, that there is some kind of evidence-base for contemporary medicine, I go on to ask how this evidence-base is modified in clinical practice. It emerges that there are a number of important modifications. Firstly, evidence must be individualised to the specific patient in the same way as a detective uses evidence in his investigation of a particular case. Secondly, doctors draw on wider sources of information than just the scientific evidence-base when they

are treating patients. For example, patients' anecdotes and stories about themselves and the origins of their complaints are an important source of information in constant use. Thirdly, all the information in use by doctors is interpreted by them in the light of their knowledge of the individual patient and the patient's views must be sought on treatment decisions in the form of consent.

In adapting this evidence-base to the clinical situation it is clear that the doctor requires judgement of both a technical and a humane sort. Technical judgement is required for the application of the scientific knowledge-base and clinical skills. But, in addition to the scientific attitude, the good doctor possesses what I call a 'humane attitude'. This is revealed in the doctor's capacity for interpretation, insight and ethical sensitivity, the elements which make up humane judgement. I will analyse these elements of humane judgement.

It must be remembered that there is a domain in medicine other than the clinical, namely the public. The scientific evidence-base of public health medicine is epidemiology, which is often seen as the paradigm of objectivity. But judgement is also required in deciding what, if anything, to do about the figures suggested by epidemiological studies, and in deciding what figures should be collected in the first place. Epidemiology, therefore, is not immune to judgement.

Granted, then, that the doctor requires not only technical judgement, which derives from evidence-based knowledge, but also humane judgement, which derives from a humane attitude, we must then face

the question of whether, and if so, how, the humane attitude can be taught. Emphasis in medical education has concentrated on encouraging ethical awareness but it is equally important that medical education should enable doctors to develop a broad perspective. This may involve a 'counter-culture' to weigh in the balance against the medical ethos.

The General Medical Council (GMC) has created the possibility of introducing a broad non-medical perspective to undergraduate education through the use of special study modules (SSMs). I conclude my thesis by outlining two such possible non-medical SSMs and describe the educational objectives appropriate to them.

DIAGRAMMATIC SUMMARY

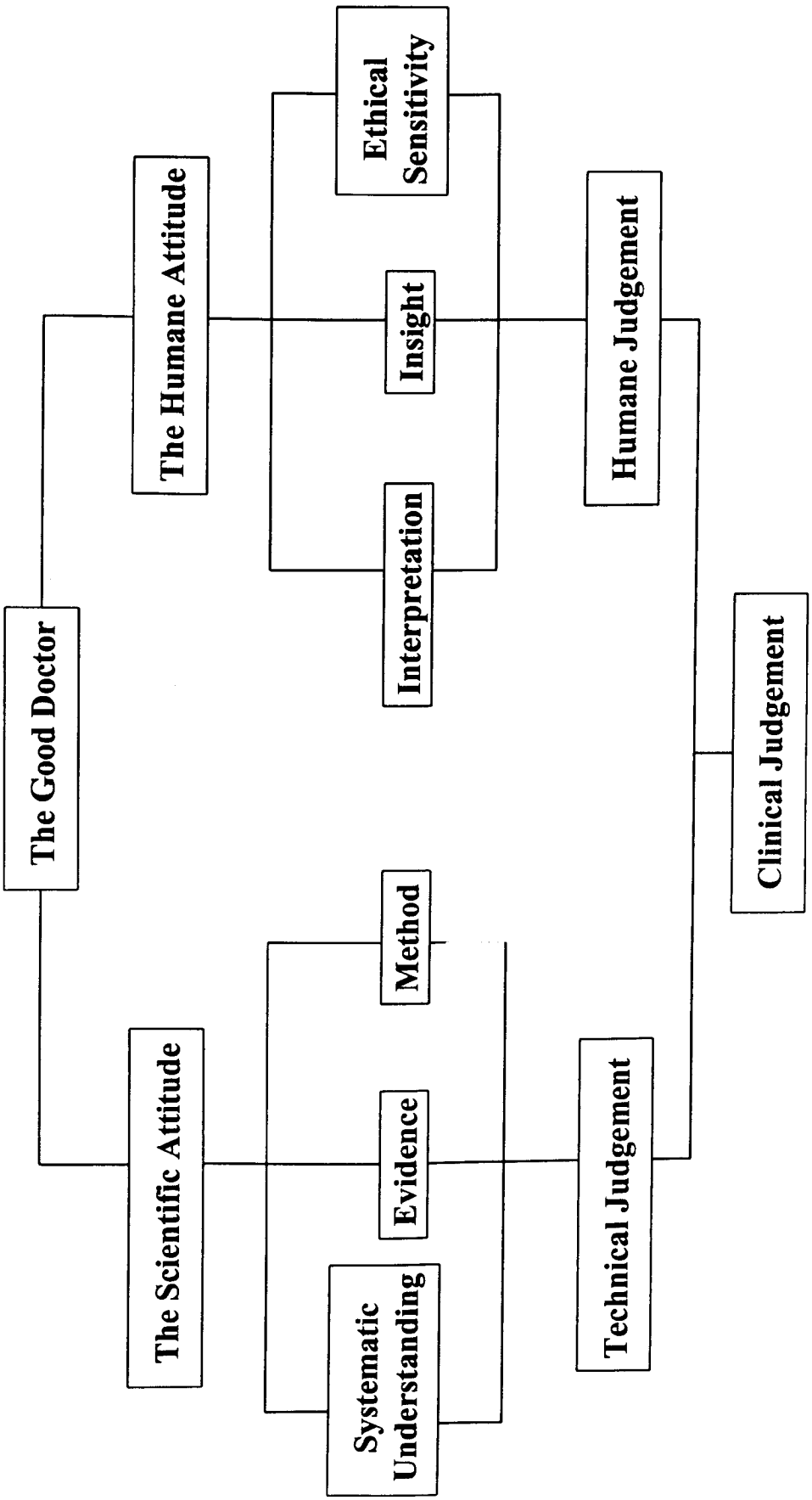


TABLE OF CONTENTS

CHAPTER HEADINGS PAGE

CHAPTER HEADINGS PAGE

CHAPTER HEADINGS PAGE

CHAPTER HEADINGS PAGE

CHAPTER HEADINGS PAGE

GUIDE TO ABBREVIATIONS

British Journal of General Practice	BJGP
British Medical Association	BMA
British Medical Journal	BMJ
General Medical Council	GMC
General Medical Services Committee	GMSC
General Practitioner	GP
HM Stationery Office	HMSO
World Health Organisation	WHO

INTRODUCTION

This thesis represents my attempt to come to terms with my own education and subsequent training and practice as a doctor and now also as a medical educator. My first degree was a joint honours in Scottish History and English Literature. I then studied medicine and, after basic training, practised in a specialist setting with pregnant women with drug and alcohol problems before becoming a general practitioner. I am now part-time in general practice and part-time a lecturer in general practice at the Department of General Practice at Glasgow University. This varied background created a number of tensions.

First, I early became conscious of the difference between my arts background and my medical background. As an arts student I had gained a broad education on many areas of life, whereas as a medical student I had received a training in a number of skills and acquired a great deal of knowledge. My question became that of how the professional skills and knowledge required for medicine could be developed in an educational framework. This question has become acute since I am now employed to teach medical students.

Secondly, I became conscious of a tension within my medical practice. The contemporary emphasis is on 'evidence-based' medicine and for some time the scientific and technical aspects of medicine have been much celebrated in TV presentations. But I was aware of the enormous problems of adapting this scientific evidence-base to my clinical

practice. It is a cliché that patients are more than the illnesses or diseases they may have, but this 'more' could not be adequately dealt with by adding on courses on 'communication skills', or 'ethics', important though they may be. What was needed was what I vaguely identified as a 'humane attitude'. But how was this to be analysed?

Thirdly, supposing I could analyse the 'evidence-base' and the 'humane attitude' how could I combine these in an educational programme for medical students which would result in the development of good doctors? The General Medical Council (GMC) helped with this question in that it produced in 1993 a document entitled *Tomorrow's Doctors* [1] in which it insisted that all medical curricula should be reorganised and should contain a 'core' (of essential medical knowledge and skills) and 'special study modules', some of which would be on non-medical subjects. I have been fortunate in that I have been involved in some of the planning as well as the implementation of the new curriculum in Glasgow.

It became clear to me that an attempt to deal with these issues would involve me in a philosophical enterprise, and I am conscious of my limitations as a philosopher. It is difficult to have the energy for close reading and thinking after a long day in clinical practice, and I ask my philosophical readers for forbearance. I was much assisted, however, when my supervisor directed me to the riches of the Scottish Enlightenment. This, of course, fitted with my background in Scottish History, and I was encouraged to find clear and readable discussions of at least some of the problems with which I was faced.

In more detail, I saw my problem (of analysing what comprises 'the good doctor') as having three aspects. First, I had to give an account of the scientific evidence-base of medicine. This involved: an extensive analysis of the nature of science, and a consideration of how far medical research, and then clinical practice, are each in any sense 'scientific'. Secondly, I had to give an account of the humane attitude which converts the scientific evidence-base of medicine into good clinical practice. Thirdly, I had to give an account of how, in the context of the present curriculum changes, the first and second tasks could be carried out.

In conclusion, the theses I shall defend are: that there is a scientific evidence-base to medical research, provided we interpret 'science' widely; that the evidence-base of medical research, while it may involve technical judgement, cannot wholly determine good clinical practice or good public health medicine; that what additionally is required for good clinical practice and good public health medicine are interpretation, insight and ethics, which I shall collectively call 'humane judgement'; that humane judgement derives from a humane attitude; that a humane attitude can, to some extent, be cultivated within the current new framework for medical education.

CHAPTER 1

THE LAB: THE DOCTOR AS SCIENTIST

1.1 INTRODUCTION

Any account of what makes a good doctor must have something to say on scientific medicine. The good doctor, whatever else he may be must at least be some sort of scientist. Now, whereas it is impossible to dissent from this view, it is a much more complex view than might seem to be the case. There are two complexities. First, the assimilation of science by medicine is relevant in different ways to medicine; the impact of science in medical research is different from its impact on clinical practice. In this chapter I am concerned with science and medical research, and in the next chapter, with science and clinical practice. Secondly, different sorts of activities count in medical opinion as scientific. There are three activities regarded by doctors as comprising modern medical research:

(a) the search for systematic understanding of the body in its normal workings and in its pathology;

(b) empirical observation of the behaviour of patients, doctors and their interactions (qualitative research);

(c) randomised trials to establish the best treatments.

In order to discuss what is 'scientific' about activities (a), (b) and (c) I will describe what is meant by 'science' in its general sense (1.2 - 1.6). I will then return to a discussion of the medical applications of science to the biological and pathological understanding of the body (1.7.1), to

the empirical observation of patient and doctor interactions (1.7.2), and to the design, implementation and dissemination of the results of scientific trials in medicine (1.7.3). Having examined medicine with this scientific spotlight I will conclude this chapter by offering an answer to the question 'Is medicine scientific?' (1.8).

1.2 THE NATURE OF SCIENCE : METHOD

The question 'What is science?' is a difficult one to answer. It was not always so, however, because science in its root meaning means simply 'knowledge' from the Latin *scientia.* So to this day in the University of Cambridge a philosophy degree is a degree in the moral sciences. Equally, a degree in physics in some universities is still called a degree in natural philosophy. The problem I am addressing arises only from the beginning of the 18th century when there was an attempt to distinguish what we now mean by science from the rest of knowledge.

It will be found that there is no one account that covers all the activities, aims or methods which have been regarded as 'science'; rather, there are a range of such activities which have a legitimate claim to be called scientific. The implication of this position is that, rather than seek necessary and sufficient conditions, we shall do better to look for a range of 'family resemblances'[2] or overlapping sets of characteristics which will link together to build up the concept of science. This method will be particularly useful in the context of the discussion of the scientific nature of medicine as we will be able to refer to various sorts of scientific activity. This variety of activities thought to be scientific will help illustrate the different ways in which medicine might be thought to be scientific. The variety emerges when we try to characterise science in terms of a method (1.2), a kind of evidence (1.3), an aim (1.4) and an outlook (1.5).

Many philosophers who wish to characterise the activities of science in terms of a method begin by examining the features which emerged when science began to take its contemporary shape during the 17th and 18th centuries. This is not an unreasonable procedure because it is easier to detect the conceptual structure of science at this time than it is later when the content of science has become technically much more complex and the separate sciences have adopted identities of their own. If we are to distinguish the wood from the trees it is preferable to look at this early period. Yet there is one common failing in the philosophers who take this approach: it is that they are drawn in to the huge gravitational field of major scientists such as Galileo and Newton, and they define the characteristics of scientific method as a whole in terms of the characteristics of natural philosophy and its essential quantification. This, as we shall see (1.7.2), has had a disastrous effect on some aspects of medical research. I shall try not to ignore the major contributions of Galileo and Newton, but shall also bear in mind those of others such as William Smellie to natural history[3], or Robert Hooke to meteorology. I shall concentrate on Hooke[4].

The main characteristics of science are to be found in a passage on meteorology written by Hooke, who was Newton's great opponent in the Royal Society. The quotation is a long one, but quoting it in full can be justified not only on account of its relevance to my theme of the nature of science but also on account of the elegance of its language (a feature not usually found in contemporary scientific or medical writings!)

1.2.1 Robert Hooke's method

'For the better making a History of the Weather, I conceive it requisite to observe,

1. The Strength and Quarter of the Winds, and to register the Changes as often as they happen; both which may be very conveniently shewn, by a small Addition to an ordinary Weather-cock.
2. The Degrees of Heat and Cold in the Air; which will be best observed by a sealed *Thermometer*, graduated according to the Degrees of *Expansion*, which bear a known Proportion to the whole Bulk of Liquor, the beginning of which Gradation, should be that Dimension which the Liquor hath, when encompassed with Water, just beginning to freeze, and the Degrees of Expansion, either greater or less, should be set or marked above it, or below it.
3. The Degrees of Dryness and Moisture in the Air; which may be most conveniently observed by a Hygroscope, made with the single Beard of a wild oat perfectly ripe, set upright and headed with an Index, after the Way described by Emanuel Magnan; the Conversions and Degrees of which may be measured by Divisions made on the rim of a Circle, in the Centre of which, the Index is turned around: The Beginning or Standard of which Degree of Rotation, should be that, to which the Index points, when the Beard, being thoroughly wet, or covered with Water, is quite unwreathed, and becomes strait. But because of the Smallness of this Part of the Oat, the Cod of a wild vetch may be used instead of it, which will be a much larger Index, and will be altogether as sensible of the Changes of the Air.

4. The Degrees of Pressure in the Air; which may be several Ways observed, but best of all with an Instrument with Quicksilver contrived so, as either by means of Water, or an Index, it may sensibly exhibit the minute Variations of that Action.
5. The Constitution and Face of the Sky or Heavens; and this is best done by the Eye; here should be observed, whether the Sky be clear or clouded; and if clouded, after what Manner; whether with high Exhalations or great white Clouds, or dark thick ones. Whether those Clouds afford Fogs or Mists, or Sleet, or Rain, or Snow, &c. Whether the under side of those Clouds be flat or waved and irregular, as I have often seen before Thunder. Which way they drive, whether all one Way, or some one way, some another, and whether any of these be the same with the Wind that Blows below; the Colour and Face of the Sky at the rising and setting of the Sun and Moon; what Haloes or Rings may happen to encompass those Luminaries, their Bigness, Form and Number.
6. What Effects are produced upon other Bodies: As what Aches and Distempers in the Bodies of Men; what Diseases are most rife, as Colds, Fevers, Agues, &c. What Putrefactions or other Changes are produced in other Bodies; as the sweating of Marble, the burning blue of a Candle, the blasting of Trees and Corn; the unusual Sprouting, Growth, or Decay of any Plants or Vegetables; the Putrefaction of Bodies not usual; the Plenty of Scarcity of Insects; of several Fruits, Grains, Flowers, Roots, Cattel, Fishes, Birds, anything notable of that Kind. What Conveniences or Inconveniences may happen in the Year, in any kind, as by Floods,

Droughts, violent Showers, &c. What Nights produce Dews and Hoar-Frosts, and what not?

7. What Thunders and Lightnings happen, and what Effects they produce; as souring Beer or Ale, turning Milk, killing Silkworms, &c? Anything extraordinary in the Tides; as double Tides, later or earlier, greater or less Tides than ordinary, rising or drying of Springs; Comets or unusual Apparitions, new Stars, Ignes fatui or shining Exhalations, or the like. These should all or most of them be diligently observed and registered by some one, that is always conversant in or near the same Place.
8. Now that these, and some others, hereafter to be mentioned, may be registered so as to be most convenient for the making of Comparisons, requisite for the raising Axioms, whereby the Cause or Laws of Weather may be found out; it will be desirable to order them so, that the Scheme of a whole Month may at one View be presented to the Eye: And this may conveniently be done on the Pages of a Book in Folio, allowing fifteen Days for one side, and fifteen for the other. Let each of those Pages be divided into nine Columns, and distinguished by perpendicular Lines; let each of the first six Columns be half an Inch wide, and the three last equally share the remaining of the Side.
9. Let each Column have the Title of what it is to contain in the first at least, written at the Top of it: As, let the first Column towards the left hand, contain the Days of the Month, or Place of the Sun, and the remarkable Hours of each Day. The second, the Place, Latitude, Distance, Ages and Faces of the Moon. The third, the Quarters and Strength of Winds. The fourth, the Heat and Cold of the Season.

The fifth, the Dryness and Moisture of it. The sixth, the Degrees of Pressure. The seventh, the Faces and Appearances of the Sky. The eighth, the Effects of the Weather upon other Bodies, Thunders, Lightnings, or anything extraordinary. The ninth, general Deduction, Corollaries or Syllogisms, arising from the comparing of several Phenomena together.

10. That the Columns may be large enough to contain what they are designed for, it will be necessary, that the Particulars be expressed with some Characters, as brief and compendious as is possible. The two first by the Figures and Characters of the Signs commonly used in Almanacs. The Winds may be exprest by the Letters, by which they are exprest in small Sea-Cards; and the Degrees of Strength, by 1, 2, 3, 4, &c. according as they are marked in the Contrivance in the Weather-cock. The Degrees of Heat and Cold may be exprest by the Numbers appropriate to the Divisions of the Thermometer. The Dryness and Moisture, by the Divisions in the Rim of the Hygroscope. The pressure by Figures, denoting the Height of the Mercurial Cylinder. But for the Faces of the Sky, they are so many, that many of them want proper Names; and therefore it will be convenient to agree upon some determinate ones, by which the most usual may be in brief exprest. As let Clear signify a very clear Sky without any Clouds or Exhalations; Checquer'd a clear Sky, with many great white round Clouds, such as are very usual in Summer. Hazy, a Sky that looks whitish, by Reason of the Thickness of the higher Parts of the Air, by some Exhalations not formed into Clouds. Thick, a Sky more whitened by a greater Company of Vapours: these do usually make the Luminaries look

beared or hairy, and are oftentimes the Cause of the Appearance of Rings and Haloes about the Sun as well as the Moon. Overcast, when the Vapours so whiten and thicken the Air that the Sun cannot breath through; and of this there are many Degrees, which may be exprest by a little, much, more, very much overcast, &c. Let Hairy signify a Sky that hath many small, thin, and high Exhalations, which resemble Locks of Hair, or Flakes of Hemp or Flax; whose Varieties may be exprest by strait or curv'd &c. according to the Resemblance they bear. Let Water'd signify a Sky that has many high thin and small Clouds, looking almost like water'd Tabby, call'd in some Places a Mackrel Sky. Let a Sky be called Wav'd, when those Clouds appear much bigger and lower, but much after the same manner. Cloudy, when the sky has many thick dark Clouds. Lowring, when the sky is not very much overcast, but hath also underneath many thick dark Clouds which threaten Rain. The Signification of gloomy, foggy, misty, fleeting, driving, rainy, snowy, Reaches or Racks variable, &c. are well known, they being very commonly used. There may also be several Faces of the Sky compounded of two or more of these, which may be intelligibly enough exprest by two or more of these Names. It is likewise desirable, that the Particulars of the eighth and ninth Columns may be entered in as little Room and as few Words as are sufficient to signify them intelligibly and plainly.

11. It were to be wisht that there were diverse in several Parts of the World, but especially in distant Parts of this Kingdom, that would undertake this Work, and that such would agree upon a common Way somewhat after this Manner, that as near as could be, the same

Method and Words might be made Use of. The Benefit of which Way is easily enough conceivable.

12. As for the Method of using and digesting those so collected Observations; that will be more advantageously considered when the *Supellex* is provided; a Workman being then best able to fit and prepare his Tools for his Work, when he sees that Materials he has to work upon.'

What can be learned about science and its methods from this passage? The methods of science, according to Hooke, involve:

1. General observation (para. 1 ff.)
2. The registering, i.e. recording, of observations (para. 1)
3. The use of instruments and experimentation (e.g. para. 2,3,4)
4. Measurement (para. 3,4)
5. Observation of the effects produced by the phenomenon under consideration (para. 6-7)
6. The making of comparisons among phenomena (para. 8)
7. Generalisation (para. 9)

('The ninth [Column] general Deduction, Corollaries or Syllogisms, arising from the comparing of several Phenomena together.')

8. Definitions and classifications (para. 10)

('As let Clear signify a very clear sky without any Clouds or Exhalations')

9. The use of comparative tables (para. 8-10)
10. The use of symbols (para. 10)

('The Winds may be exprest by the Letters')

11. The formulation of hypotheses about causation (para. 8)

('Now that these, and some others, hereafter to be mentioned, may be registered so as to be most convenient for the making of Comparisons, requisite for the raising Axioms*, whereby the Cause or Laws of Weather may be found out...')

[* The term 'axiom' in 17th century science has a variety of meanings. One of them is equivalent to what we mean by 'hypothesis'. On the other hand, in the 17th and 18th centuries, hypothesis sometimes meant 'speculation', as when Newton says : 'Hypotheses non fingo'[5].]

12. Observation over a period of time (para. 8)
13. References to the work of other scientists (para. 2)
14. A desire for consistency in method and terminology in different scientific centres (para. 11)
15. What can be termed 'reductivism' - the separation of components for analysis from a total whole (para. 3, 4, 5)
16. A claim for better equipment and research staff (para. 12).

These sixteen features (there may be others in the passage) are all recognisably activities which present day scientists engage in, even to the claim for better equipment! They are not necessary or sufficient conditions, and different sciences will stress some features more than others. For example, William Smellie, the natural historian, is interested in classification so quantification does not play a part in his science[6]. Galileo, on the other hand, does not think that nature can be understood without the use of mathematics:

> 'Philosophy is written in that vast book which stands forever open before our eyes, I mean the universe; but it cannot be read until we have learnt the language and become familiar with the

> characters in which it is written. It is written in mathematical language, and the letters are triangles, circles and other geometrical figures, without which means it is humanly impossible to comprehend a single word.'[7]

Obviously the problems of characterising the methods of science in terms of necessary and sufficient conditions are compounded if the social sciences are included. We shall therefore need to be content with a number of loosely associated features. It might be argued that some of these are more central than others. But even this is not obvious. For example, if we say that some kind of quantification is essential then anatomy is pushed to the margins, and if we say that observations and experiment are essential then mathematics cannot be a science.

Nevertheless, at the risk of oversimplification, we might say that in the many activities recommended by Hooke we can discern a very general type of scientific procedure, and from that suggest that science can be seen as a method or process. It was clear that Hooke was methodical and precise in his way of investigating the weather. But this kind of description could be given of the methods of many disciplines. Historians are methodical about the way in which they investigate a particular event and order and evaluate the documents relating to it, but their methods are not scientific in the modern sense. What is specific to the methods of science which distinguish them from other disciplines?

1.2.2 Salient features of scientific method

There are a number of points to be made here. Firstly, most scientific enquiries start with an *observation* which - because science seeks to explain things about the world - is turned by the scientist in to a question. For example, the scientist might observe that when an object is dropped into a pool of water concentric waves spread out from that point in ever increasing circles until they decay. This observation then becomes a puzzle which must be solved. The second step in the process is to suggest an explanation as to why this might happen i.e. to set up a *hypothesis*. In this case the hypothesis might be that in the process of dropping the stone into the pool some energy is transferred to the water which becomes wave energy which slowly decays the further it gets from the source of the energy.

Having set up the hypothesis, or possible explanation for the observation, the scientist in the third step has to *test* it by *experiment* to see if it is correct, or at least probable. His experimentation may confirm or deny his hypothesis. If the hypothesis is proved false, he will have to start again at step two with a new hypothesis and then test this one for its veracity.

The important point about this third step is that the experimentation is designed to prove that the explanation or hypothesis applies to *all* instances when the same circumstances exist. In other words, if, every time a stone was thrown into the water, the scientist was able to test his hypothesis about the outcome, he would come up with the same explanation time after time. So the fourth characteristic point about

scientific method is that it produces conclusions which are *generalisable* and apply in all other similar circumstances. A discipline like history does not aim to produce conclusions which are applicable to all similar situations. The point about history is that each event must be studied on its own terms and in its own context. We may find that there are similarities in the circumstances which preceded the French and Russian revolutions but we certainly cannot say that they were the same circumstances or that the explanation for both was the same.

In summary, then, scientific method usually takes the form of:

1) Observation

2) Hypothesis formation

3) Experimentation, which if it confirms or, at least, renders possible the hypothesis, leads to

4) Generalisation.

This outline describes the whole scientific process, but often scientific 'method' is taken to mean the *experimental* methods used by scientists. I will say more about this in (1.3.2), but will note here that most people regard the methods of science as primarily quantitative. This is the main reason why the colloquial sense of science has the meanings it now has of 'precision' and 'reliability'. However, qualitative research methods are now being used in some scientific disciplines in order to measure things which are not amenable to numerical measurement. This movement has a bearing now on research work in medicine and I will assess in a later section (1.7.2) the extent to which this might be regarded as scientific or not.

1.3 EVIDENCE

Before leaving scientific method I must indicate what the role of 'evidence' is. The reason why some analysis of the concept of evidence is necessary here is that the scientific pretensions of medicine are currently expressed via the concept of evidence. 'Evidence-based medicine' has become a catch phrase which cannot be questioned in medical circles. But what is 'evidence' and what is its place in science?

My method of analysis will be to investigate the logical process which converts inconsequential facts into 'evidence', and in so doing I shall discuss the proper use of the different strands of evidence which are available to the practising physician. In order to illuminate the nature of evidence as it is seen in medicine I shall draw parallels with 'evidence' as understood in science and in detective work.

From one point of view, evidence is really just information, but it is a certain kind of information in that it relates to a *specific* medical, scientific or forensic conclusion. We do not just say 'This is evidence', we say 'This is evidence *for* something or *that* something is the case'. Information and data can be *about* something but they do not suggest that we must draw any conclusions from them. A couple of examples might help to outline the process by which data becomes evidence.

Henry's friend comes round to visit him one evening and gets no answer when he rings the bell. The friend looks for Henry's car and finds that it is gone. Being persistent, he checks round at Henry's back

door and finds it locked and that the kitchen lights are out and the house is silent. The friend assesses all this data in the context of his attempted visit and concludes that Henry is out. The facts of the unanswered bell, the absent car and the darkened house, therefore, become evidence that Henry is away from home.

To take a legal example, in the case against McTavish, who is alleged to have held up and robbed a bank, the prosecuting lawyer says : 'The facts in the case are these: McTavish bought a gun; he was seen in the region of the bank at the time of the armed robbery; he was later found in possession of a large sum of money' . These facts become evidence when the lawyer suggests that the jury must conclude that it was McTavish who held up the bank.

What, then, are the important aspects of the handling of the facts in these two cases which turn them into evidence? Firstly, the facts have to be relevant to the case and they must be relevant in a particular way, i.e. in that they are facts which contribute to a specific hypothesis relating to the case. The three facts in the first case (the unanswered bell, the absent car and the darkened house) are all relevant to the claim that Henry is not at home and they suggest that conclusion. Secondly, there must be some assessment of the extent to which these facts suggest this conclusion. I will refer to this aspect of evidence as its 'weight'. For example, facts may be relevant to a case but we have to know *how* relevant they are in order to assess whether these facts are more or less likely to support the hypothesis we have formed. If we look again at the second example, the fact that McTavish was seen

in the region of the bank at the time it was robbed might be said to be relevant to the hypothesis that it was he who robbed the bank, but there were also many other people walking up and down outside the bank at that time. However, as we are able to bring forward other bits of information which are relevant to our hypothesis - McTavish had bought a gun and he was found in possession of a large sum of money - the importance or weight of this first piece of evidence increases.

The third and final point about the handling of facts as evidence is that they must be submitted to the judgement of an assessor[8]. This seems an obvious point in view of the above discussion, because it is necessary to submit facts to the judgement of someone who will carry out the process of assessing their relevance as evidence, weighing their importance and drawing conclusions from them. This point needs to be stressed however, as it is an important point of distinction between facts and evidence. Facts or data can be accepted without recourse to judgement but facts as evidence necessarily involve judgement. The concept of evidence is, therefore, parasitic upon the concept of judgement. Now the concept of judgement is normative in the sense that it is prioritising certain facts as the important ones, or it is claiming that certain facts amount to good evidence or put a conclusion beyond reasonable doubt. We can, therefore, say that the concept of evidence (which relies upon judgement) must also be normative. In other words, the conclusion that some fact or piece of data constitutes 'evidence' for something is not arrived at through an entirely objective process, it depends on some individual or group evaluation.

From this analysis we might say that 'evidence' is information relating to a subject or case, which is relevant to a particular argument, and which gives weight to a certain conclusion about the subject. The existence of facts as 'evidence' is, therefore, irresistibly related to the concept of 'judgement' as someone has to determine whether the facts are relevant and whether, and to what extent, the facts support a certain conclusion. A collection of data cannot, therefore, be called evidence until the context in which it is to be used is clear and some process of reasoning has been exerted to determine its usefulness in that context. Let us now look at this process in more detail.

1.3.1 Relevance

The first thing to establish about information which might be used as evidence is its relevance. It is important to be clear exactly what we mean by 'relevance' in this context as the concept can have two meanings. The first is that the information has a general association with the subject matter in that it is in some non-specific way related to it. An example might be the suggestion that blood cholesterol levels are associated with the development of heart disease in some way. The second meaning is that the information is relevant only in the context of a specific hypothesis relating to the subject. In this case the example would be that blood cholesterol levels are related to heart disease in that a high level is associated with an increased likelihood of heart disease. The first meaning of relevance would not fit in with the conditions we have already established for data to be regarded as evidence. Data can also be about a subject but evidence must relate to some hypothesis about the subject.

This second, more precise, meaning has implications for the way in which data is collected to be used as evidence, particularly in the context of a scientific inquiry. If, as I have argued, data must be relevant to a specific hypothesis about a subject to be used as evidence, then the hypothesis must be formulated *before* the collection of the data. If it is not then the enquirer has no idea whether the information he is collecting or the context in which he is studying it will be relevant to his study or not. The philosopher of science, Carl Hempel, summarises this point :

> 'an empirical finding is relevant for a hypothesis if and only if it constitutes either favourable or unfavourable evidence for it; in other words if it either confirms or disconfirms the hypothesis.'[9].

The implication of this conclusion is that scientific inquiry is not just about gathering together all the information we have about a subject and seeing where it takes us. We have to construct a hypothesis and use only that information which is relevant to the hypothesis and, as Hempel has said, the information is still evidence even if it disconfirms the hypothesis. This way of looking at evidence is particularly relevant to a scientific inquiry and we might, therefore, call it the 'science model' of evidence.

It is, however, possible to argue for the first meaning of relevance in other contexts where evidence is used. The work of the detective is one such context. In Arthur Conan Doyle's 'A Study in Scarlet' Dr Watson upbraids Sherlock Holmes for not paying enough attention to the case they have just set out to investigate:

' " You don't seem to give much thought to the matter in hand," I said at last, interrupting Holmes's musical disquisition.

" No data yet," he answered. "It is a capital mistake to theorise before you have all the evidence. It biases the judgement".' [10].

The role of the detective, as described here by Holmes, is to amass all the material relating to a case and then formulate some hypothesis as to its solution. Once there is sufficient evidence to form the hypothesis that Jones has committed the crime then the detective can set about trying to prove a case against Jones. This model of evidence contrasts with the science model described above in that the hypothesis is derived from a consideration of the evidence available.

In summary, we now have two models of 'relevant' evidence. One, which I have called the 'science model', says that data is relevant as evidence for a hypothesis only if it contributes to a specific argument for or against that hypothesis. The second, which we might call the 'detective model', says that all data is relevant if it has some bearing on a case and can contribute to the formation of a hypothesis relating to that case. I will come back to these ideas later when considering the idea of judgement.

1.3.2 Weight

Moving from the two models of 'relevance' we can now consider the second factor about the concept of evidence. This is the 'weight' to be given to information considered as evidence. Having established that a hypothesis 'H' may be corroborated by a body of evidence 'E' (which is what we would attempt to do by establishing relevance) we then

need to move on to establish the *extent* to which E confirms H. This will enable us to decide whether hypothesis H is a more plausible explanation of events or phenomena than another hypothesis, H1. Hempel breaks the problem of defining weight into two parts :

> ' (1) To lay down criteria defining a metrical concept "degree of confirmation of H with respect to E", whose values are real numbers; or failing this,
>
> (2) To lay down criteria defining two relational concepts, "more highly confirmed than" and "equally well confirmed as", which make possible a non-metrical comparison of hypotheses' [11].

In the medical context, Hempel's first part might refer to any standard randomised controlled trial where the outcomes can be measured numerically. Statistical calculations can be made on the probabilities of these outcomes coming about because of the drug being used in the trial (main hypothesis) or because of chance (alternative hypothesis). The statistical calculations used to represent such probabilities are p values and are appropriate for quantitative studies. Hempel's second part would be appropriate to qualitative studies where the concern of the researcher is with concepts such as patient satisfaction or students' anxiety. A non-metrical comparative approach is appropriate for such studies as the concepts they deal with cannot be given numerical values in a meaningful way (see 1.7.2) and another method of expressing the degree of weight to be given to the evidence is required.

There is, therefore, no single correct approach to assessing the weight to be given to evidence in medicine. At times it is appropriate to apply

numerical calculations to the solution and at other times the best that can be said is 'more probable' or 'less probable'.

1.3.3 Judgement

So far we have looked at the process by which a body of information or data becomes evidence when its relevance and weight with respect to a certain hypothesis are established. Now we come to look at the way in which this relevance is established and importance weighed i.e. through the personal judgement of the investigator :

> 'The investigator's task is to assemble the relevant evidence and then to judge whether the assay means A or B: true or false, innocent or guilty, well or ill. The historian, the judge, the physician follow methodological procedures that hinge upon a common characteristic: their personal judgement must play the decisive role in assembling the evidence, drawing the inference, and formulating the conclusion in each case they consider.' [12]

In this passage Lerner emphasises the importance of personal judgement at all stages of the process by which data becomes evidence. The importance of, and elements in, personal judgement will be discussed again in 2.6, 3.6 and the Conclusion (ch. 6).

But let us, therefore, look at the role of judgement in relation to the two models of evidence that I considered earlier when considering relevance. The scientist relies on the prior creation of a hypothesis which could be tested experimentally to establish findings which should be true in all similar circumstances. The time for personal judgement in this model is at the formulation of the hypothesis which

precedes data collection. The hypothesis itself might come about as a result of a flash of insight[13] (see 3.6.2) or from a period of contemplation, but it requires the exercise of the investigator's judgement to assess whether it is worth experimental testing and in what way. This approach can be described as hypothetico-deductive reasoning. The detective model relies on the amassing of all relevant information in a case for consideration by the investigator who would then construct an argument relating to the case. The hypothesis formation follows a consideration of the relevant data and might be described as inductive reasoning.

The two models differ, therefore, in the kind of thinking that results from their approach to the concept of relevance. If we consider also the question of the aim of science as distinct from that of detective work, we find a further fundamental distinction. The scientist aims at establishing truths about the world which will hold in all similar circumstances. The detective looks only to discover the truth in the particular case he is considering. Those specific truths will have no universal applications, though the experience of studying the particular case may be of use to the detective in future cases. The distinction between the scientist's and the detective's approach to and inferences from evidence will come up again in 2.4.

1.4 SCIENTIFIC AIMS

1.4.1 Understanding

I have so far tried to characterise science in terms of methods and procedures, including the use of evidence. But another way of identifying science is in terms of its aims. I wish to maintain that the primary aim of scientists is to reach a particular kind of understanding of nature, including human nature and society. This aim is intrinsic to, or internal to, scientific activity as such, although of course some scientists may wish to apply their understanding to goals external to science, such as finding cures or building bridges. The understanding of the scientist derives from systematic knowledge, from knowledge of the 'connecting principles' of nature (see 1.6).

By saying that scientific knowledge is *systematic* I mean that each bit of knowledge is known and understood in relation to other bits of knowledge and is dependent on other knowledge and understanding. If we compare science with natural history this may become clearer. We could suggest that the aims of natural history and science are the same: to discover the truth about the world. The naturalist might make the observation that insectivorous plants are to be found commonly in boggy ground. This observation is sufficient for the naturalist whose role is to describe what it is that he sees. The scientist (botanist in this context), however, would go further and wish to explain this observation. He might suggest from other knowledge that, as boggy ground is nitrogen poor, the plants that inhabit it need to get their nitrogen from somewhere else so they devour insects. The

botanist could go on to test this theory for its validity. The natural historian's observation does not need to be part of other knowledge; it can stand on its own. The scientist, however, is interested in building the knowledge of his subject into a systematic whole where each aspect makes sense in the context of the rest and must be understood in the light of the rest. It might be objected that the pursuit of systematic understanding cannot be a sufficient condition for an activity's being scientific since philosophy also seeks systematic understanding. Two replies are possible here, replies which are mutually consistent. First, the objection assumes a sharp distinction between philosophy and science which may not be defensible, and second, the systematic understanding pursued by philosophers may be at a different level from that pursued by scientists. The latter are seeking the connecting principles of *nature* whereas the former are seeking the connecting principles of *concepts*. I shall not pursue these difficult points but rather I shall outline a rival view of the aim of science.

1.4.2 Control

The origins of the view that the aim of science is to control nature for human betterment are to be found in the works of Francis Bacon (1561-1626). Bacon was not himself much of a scientist, but rather a prophet, or philosopher of science, and as such his writings were influential. His writings about science had three overlapping themes. First, he is caustic in his criticism of existing and preceding science.

> 'Surely, like as many substances in nature which are solid do putrefy and corrupt into worms; so it is the property of good and sound knowledge to putrefy and dissolve into a number of subtle,

> idle, unwholesome, and (as I may term them) vermiculate questions, which have indeed a kind of quickness and life of spirit, but no soundness of matter or goodness of quality. This kind of degenerate learning did chiefly reign among the schoolmen; who, having sharp and strong wits, and abundance of leisure, and small variety of reading, but their wits being shut up in the cells of a few authors (chiefly Aristotle their dictator) as their persons were shut up in the cells of monasteries and colleges, and knowing little history, either of nature or time, did out of no great quantity of matter and infinite agitation of wit spin out unto us those laborious webs of learning which are extant in their books. For the wit and mind of man, if it work upon matter, which is the contemplation of the creatures of God, worketh according to the stuff and is limited thereby; but if it work upon itself, as the spider worketh his web, then it is endless, and brings forth indeed cobwebs of learning, admirable for the fineness of thread and work, but of no substance or profit.'[14]

Secondly, he holds that science can proceed only by observation and experiment.

> 'Man is the helper and interpreter of nature. He can only act and understand in so far as he has observed nature's order practically or theoretically. Outside this he has no knowledge or power.'[15]

Thirdly, and most relevantly for present purposes, he asserts the view that the justification for scientific research is to improve life for mankind.

> 'It is well to observe the force and effect and consequences of discoveries. These are to be seen nowhere more conspicuously than in those three which were unknown to the ancients, and of which the origin, though recent, is obscure; namely, printing, gunpowder, and the magnet... no empire, no sect, no star seems to have exerted greater influence on human affairs than these mechanical inventions.'[16]

It should be noted that Bacon did not clearly distinguish (2) and (3), and writes:

> 'Truth therefore and utility are here the very same thing: and works themselves are of greater value as pledges of truth, than as contributions to the comforts of life.'[17]

This view, that the aim of science is to control nature for 'human welfare', had a large following in the 18th century, and many intellectual societies were established with that aim. For example, the Royal Society of Edinburgh was founded in 1783 with the aim of 'the advancement of useful knowledge.'

The two views, that the aim of science is to provide understanding of nature through systematic knowledge, and that the aim is to control nature for human betterment, are not necessarily incompatible. For if we understand the workings of the natural world we may be able to use that systematic knowledge to control nature. This would be called 'applied science'. But in practice there are likely to be important differences between proponents of the two views in what is regarded as satisfactory science. The differences are shown in attitudes to the

Copernican theory. The Pope was quite prepared to accept the Copernican theory as a heuristic device, a way of calculating the calendar. But Galileo fell foul of the Church by insisting that the theory provided real understanding of nature, that the theory was true. As he says of the Ptolemic theory:

> 'Although it satisfied an astronomer merely arithmetical, yet it did not offer satisfaction or content to the astronomer philosophical.'[18]

A similar contrast can be found in the attitude of the two camps to scientific laws. For the control and utility camp, such as the Baconians, scientific laws are simply devices which help with predictions. But for the systematic knowledge camp, such as the Galileans, scientific laws are necessarily true. As Galileo says in his letter to the Grand Duchess:

> 'Nature...is inexorable and immutable; she never transgresses the laws imposed on her...'[19]

This contrast in the aims of science will be important when I come to examine the nature of scientific medicine. But I wish here to insist that 'applied science' is parasitic on pure science. The physicist is fundamentally different in his aim from the jobbing electrician, although both are important. The point is that the goals of the electrician and engineer are external to science, and follow from social purposes, whereas those of the scientist proper are internal to science and follow from the human impulse to understand and find the 'connecting principles of nature' (1.6). Moreover, and this will become more central in the next section, the view that the aim of science is simply to understand, is psychologically, if not logically, connected

with the view that the true scientist is detached from vested interests. That is one reason why, as I shall go on to discuss, there is public opinion in favour of the scientific outlook.

1.5 THE SCIENTIFIC OUTLOOK

I have so far tried to characterise science in terms of a method, an approach to evidence, and an aim. Can it be characterised in terms of an outlook or general view of the world? It is certainly widely believed that there is such a thing as a scientific world view. But when we examine what that is we find that it seems to be some one or combination of the points I have already made: that a certain method is involved, that strict criteria of evidence are used, or that the scientist is detached or disinterested. There is, however, an ambiguity in the public consciousness as to whether this world view is entirely *a good thing*. My main concern in this chapter is with the analysis of what science *is* but the question of the public perception of science and scientific method is sufficiently important to justify a slight digression. I shall, therefore, examine briefly the ambiguity in the public view of science.

Take first the strand in public consciousness which depicts science as benign. It is an accepted point of advertising jargon to suggest that science has been applied in the making of a new product and that science has been involved in proving its effectiveness. For example, claims such as 'This shampoo is scientifically proven to cure dandruff' are common in advertising. This suggestions is frequently accompanied on screen by images of people wearing white coats and handling test tubes. The appeal of the advert is not, however, to the public's understanding of the technical aspects of the chemistry of a product, but to a general sense that science brings with it safety,

reliability and a certain guarantee that the thing will work. 'Science' has come to carry this meaning in everyday use because it is seen by most people as being the preserve of clever experts whose ways are mysterious to most ordinary people. The outcome of their activities, therefore, is mysterious and unfathomable to the ordinary mortal. This sense of 'science' is not just found in the advertising world; it is part of our everyday language. We will often say things like: 'Let's just be scientific about this', meaning, 'Let's just try to sort this out in a methodical and organised way'. Usually the epithet 'scientific' also carries the sense of 'better', as in: 'I prefer to do it your way; it's more scientific.'

To describe something as 'scientific', therefore, in this sphere of everyday speech, is to suggest that it is of proven benefit, reliable or just that it is better than something else or than some other way of proceeding. It is important to acknowledge this view of science in the context of this discussion because it implies that science is held in high regard by the public and that scientists can speak with come authority in the public domain. Medicine is perceived as an activity that relies on science, and people's trust in their doctors is partly based on this perception. The 'view of the scientist' is frequently sought in discussion programmes on issues of importance to society, and it is done for many reasons, some of which are connected with the ways in which I have already characterised science: in terms of its method, its strict approach to evidence, and its detached aim of systematic understanding. In the public perception these qualifications entitle scientists to be seem as 'experts', and because of their allegedly

detached expertise they are often invited by governments and other bodies to give advice on matters such about which they have no special knowledge; the 'method' is held to be universally applicable.

There is something to be said for this public perception. Certainly, scientists are no more entitled than the rest of us to comment on the *principles* of ethics, but in some contexts they may be better placed to comment on the application of these principles. For public policy and many areas of ethical debate nowadays require knowledge of a sort which only scientists have. This knowledge gives the scientist the ability to have a view on certain issues that are not accessible to most people. For instance, the issue of xenotransplantation involves the creation of genetically manipulated pigs whose organs might be used for transplantation into humans. There are clearly technical and practical points which only scientists can discuss in relation to this new technique, but the view of the scientist also needs to be sought regarding the ethics of such a procedure. The ethics of the technique are intimately connected with practical and technical issues such as the extent to which new viruses might be passed from the animal to the human recipients of organs and so into the human domain. Thus the scientist as expert cannot simply confine himself to providing information; he must be prepared to consider the effects of the new knowledge that he has brought to light.

The example of xenotransplantation enables me to introduce the side to our perception of science which is less trusting. The first aspect of this concerns the assumption that scientists are concerned with the

detached understanding of the world. Science nowadays involves big money, which comes from governments, large foundations and pharmaceutical companies. There is a widespread suspicion that scientists can be corrupted by money as much as the rest of us. For example, pharmaceutical companies are anxious to make a return on their large investments and they therefore may be over-zealous in putting on the market products which are inadequately tested. There have been tragic examples of this, such as the thalidomide cases. Medicine is indeed especially liable to this undesirable aspects of science because of the competition among scientists to be first in the market with profit-making pharmaceuticals.

A second and connected undesirable aspect of the scientific outlook concerns the fear that the impulse to *control* (1.4.2) nature may lead scientists to 'play God' and thus tamper with what they only imperfectly understand. For example, the scientists of the day assured us of the desirable consequences of developing a nuclear industry. They were totally wrong. Are their successors, therefore, to be believed in issues such as xenotransplantation, cloning, or genetic engineering? I shall not here take sides on such issues but note them as examples of doubts which make the general public suspicious of 'the scientific outlook'.

A third aspect of science which is not thought to be wholly benign accepts the 'control' view of science and further suggests that scientific procedures, scientists themselves, and the scientific outlook, are cold, unimaginative, uncreative and boring.

This view can be found in the poet William Blake, who blamed Newton for the 'dark satanic mills' [20] of the Industrial Revolution. Another version of the discussion can be seen in the controversy sparked off by the novelist and scientist CP Snow[21] in his Rede Lecture in 1959. Snow's theory of the 'two cultures' of humanities and sciences derived from an educational tradition, particularly strong in England, which regarded education in the humanities as the education of a gentleman, fitting him to take his place in the governing class. Snow himself had been born to a lower middle class family in Leicester and his father worked as a clerk in a shoe factory. He attended the local grammar school and went on to study chemistry at Leicester University College and then at Cambridge.

The 'Two Cultures', then, for Snow, reflected a class divide in English society. The upper classes educated at the elite public schools, with their emphasis on classical scholarship, having a social and cultural advantage over the gifted grammar school boy who excelled in physics or chemistry. Snow felt that such a situation held the county back from the modern age of technological advance because the most gifted minds were not being encouraged to study the sciences. He suggested that those educated in the humanities, whose minds and vision were supposed to have been broadened by the experience, could be as narrowly specialised as any scientist :

> ' Once or twice I have been provoked and have asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold: it was also negative.

> Yet I was asking something which is about the scientific equivalent of : Have you read a work of Shakespeare's?'[22]

Science and scientists are now held in greater esteem than at the time Snow was writing but resonances of his view still exist. The fact that a scientist such as Richard Dawkins has been appointed as Professor of the Public Understanding of Science suggests that science needs good communicators to talk and write about science in a way that helps the majority of people to understand it and become excited by its ideas.

In fact the focus more recently has been on the similarities rather than on the differences in the intellectual culture of the arts and the sciences. The humanities in medicine movement in medical education (5.9) is part of this cultural shift but it is to be found in other areas too. Historians of science now emphasise the role of imagination, metaphor and analogy in scientific thinking. Creativity is seen as much a part of scientific discovery as of artistic endeavour, and sudden insights as important in scientific thinking as in art. Let us examine further the place of the imagination in scientific thinking. It seems a recent idea, but like so many 'recent ideas' it can be found in the Scottish Enlightenment, and it is in that context that I shall discuss it. It will emerge that the 'scientific outlook' is that of Enlightenment curiosity.

1.6 SCIENCE AND THE IMAGINATION : Adam Smith

The idea that scientific thinking involves the imagination can be found in the Scottish Enlightenment, specifically in an essay by Adam Smith on the History of Astronomy[23]. The clue to Smith's intentions in this early essay is provided by the fuller title of his essay 'The principles which lead and direct philosophical inquiries illustrated by the history of astronomy'. The term 'philosophy' must, of course, be taken here in a wide sense to include the natural sciences, but the important point for my purposes is Smith's use of the phrase 'lead and direct' philosophical inquiries. He means that he is offering what we might now regard as an account of the psychology of scientific discovery - the motivation of the scientist. I have so far characterised science in terms of a set of procedures and in terms of its aims. We can now characterise it in terms of a particular sort of motivation, a curiosity which is analysed by Smith in a novel way. Smith's account enables me to make a bridge between the scientist and the artist via the work of imagination.

Smith identifies three, what he calls 'sentiments', which he thinks explain the psychology of scientific discovery. They are 'wonder' , 'surprise', and 'admiration'. He explains their operations as follows:

> 'What is new and singular, excites that sentiment which, in strict propriety, is called Wonder; what is unexpected, Surprise; and what is great or beautiful, Admiration'[24].

He has much interest to say about all three of these 'sentiments' which indeed overlap and support each other, but it is his discussion of

wonder which contains points of interest on scientific discovery and explanation. For purposes of this thesis his argument may be summarised as follows:

The mind takes pleasure in observing resemblences between objects and consequently in arranging these resembling ideas into classes, technically called Genera and Species. The greater our knowledge, the more divisions and subdivisions we ascribe to genera and species. When something new turns up this generates wonder when we try to assign it to some familiar class. There is a second kind of wonder. The first kind is generated when we encounter unusual individual entities, and the second kind when we encounter uncommon successions on trains of entities. This second kind is also generated by interruptions of customary successions with which the imagination is familiar. This is where the imagination has a role, for it steps in to fill the gaps in these interruptions. The imagination is then enabled to 'flow smoothly' along apparently disjointed events. Philosophers (scientists) who have spent their lives studying connecting principles between objects will often be aware of intervals between objects which less informal or more careless observers will think are strictly conjoined. Philosophy is therefore the 'science of the connecting principles of nature'[25]. Chaotic events or irregularities disturb the imagination. 'Philosophy (science), therefore may be regarded as one of those arts which address themselves to the imagination ....'[26].

Smith has mounted a powerful argument for the role of the imagination in scientific discovery. His views here are much

influenced by those of Hume. In his account of our belief in an external world Hume argues that gaps in our perceptions of the world are filled in by the work of the imagination, which gives our perceptions the illusion of a constancy and coherence they do not really have[27]. Smith is applying this Humean idea to scientific explanation. He is arguing that wonder is triggered when the smooth course of the imagination is disturbed by an unusual event or sequence of events. The imagination is 'soothed' when philosophy (or science) shows the unusual event to be part of a system or customary order, and so enables the imagination to resume an easy passage. When the imagination has discovered 'a more coherent, and therefore a more magnificent spectacle' our admiration is prompted, which is the third stage in scientific discovery.

If I were writing a more general philosophy of science there would need to be a discussion of how we can reconcile the achievement of a 'tranquil' imagination with the 'objectivity' of science. In the History of Astronomy[28], he goes as far as suggesting 'the repose of the imagination is the ultimate end of philosophy', and he comments[29] on the ease with which 'the learned give up the evidence of their senses to preserve the coherence of the ideas of their imagination'. There is an echo here of Galileo in ' The Two Chief World Systems' when Salviati admires those

> 'that have received and held it [the Copernican system] to be true, and with the sprightliness of their judgements offered such violence to their own senses, as that they have been able to prefer that which their reason dictated to them, to that which sensible experiences

> represented most manifestly to the contrary... I cannot find any bounds for my admiration, how that reason was able in *Aristarchus* and *Copernicus*, to commit such a rape upon their Senses, as in despite thereof, to make herself mistress of their credulity'[30].

Galileo is here thinking of the coherence of mathematics, whereas Smith is thinking of the coherence of the imagination. The same problem arises for both, however, of how to reconcile the coherence of a system with the world of the senses. Fortunately I need not enter into this debate but can take from Smith the point that science is one of the arts that address themselves to the imagination, and what pleases the imagination is systematic understanding.

1.7 MEDICINE AND SCIENCE

Granted that I have roughly characterised science from various standpoints, historical and logical, I can now turn to the question: How far is medicine scientific? Medicine, of course, has a clinical as well as a research side, and I shall discuss the clinical side to medicine in chapter 2. But let us now consider how far medical *research* can be considered scientific. It will be recalled that I began this chapter by noting that there are three areas of medical research:

(a) the search for systematic understanding of the body in its normal workings and its pathology;

(b) empirical observation of the behaviour of patients, doctors and their interaction;

(c) randomised trials to establish the best treatments.

Let us discuss them in order.

1.7.1 Basic biology and pathology

If we take (a) we have an easy answer: the search for systematic understanding of the normal and pathological workings of the body is obviously completely scientific. The doctors involved are straightforwardly doing science with all the means and methods of contemporary science. Thus, normal and pathological biochemistry, physiology, anatomy, and so on, provide the developing and systematic scientific knowledge base of medicine, using all the methods of scientific research with the aim of providing understanding. When we move to (b) and (c) however, we encounter

more difficulty in reaching an appropriate answer. Let us begin with (b), research into the behaviour of patients, doctors and their interaction in medicine. This is often called 'qualitative research'.

1.7.2 Qualitative research

There are really two questions involved in considering the scientific credentials of qualitative research. First, can qualitative research meaningfully use measurements and scales in the manner of quantitative research? Secondly, supposing we cannot meaningfully use scales and measurements does it follow that quantitative research is not scientific? It is important to stress that there are two questions here, for there is a tendency among medical researchers to assume that what cannot be quantified cannot count as 'real' science. But, as I have already suggested (1.2), an activity can be scientific without being quantitative. Let us therefore examine the first question.

Should researchers involved in qualitative research use numbers to present their findings? There is an increasing focus on qualitative research in medicine[31] and, whereas the results of such research used to appear only in sociological, educational and anthropological journals[32], medical journals are beginning to publish some examples[33]. The problem is that doctors have been brought up (in a research sense) on the methods of quantitative research and these methods are given higher value than those of qualitative research by those who hold the purse strings of funding and promotion - the editorial boards of medical journals[34]. (So much for detached, scientific understanding!) There is, therefore, a tendency to force qualitative research into a

quantitative mould. For example, we find qualities like 'patient-centredness' being given a score of 1.45[35] and doctor satisfaction measured as 8.95[36]. Are such measurements meaningful or helpful[37]? In answering this question I shall focus on the uses of numbers and the establishment of scales, look at the implications numbers and scales have for qualitative research, and finally, suggest a more satisfactory interpretation of the findings of qualitative research.

(a) Numbers and scales

'Measurement has been defined as the correlation with numbers of entities which are not numbers' [38]. The use of numbers and the mechanism of counting are essential first steps in understanding the nature of measurement. We use numbers in three distinct ways[39]. Firstly, as a method of identification or labelling, as in the numbering of football players on a field or in labelling diagrams. In this case the numbers have no relationship with each other and they are assigned in a totally arbitrary fashion.

Secondly, numbers are used to indicate the position of something in a series. Examples here might be the numbering of theatre seats, or house numbers. The numbers indicate the relationship of one seat or house to the other and enable people to find them easily. A more complex example of the same use of numbers[40] is that of the relative hardness of wood, glass and diamond. Diamond can cut glass but glass cannot cut diamond; glass can cut wood but wood cannot cut glass. We can, therefore, arrange these three objects in a series of increasing hardness with wood at the bottom and diamond at the top.

If we give wood the number 1, glass 2 and diamond 3, this tells us that wood is softer than glass which is in turn softer than diamond. This kind of arrangement in a series is appropriate for non-additive qualities like hardness and also applies to the kinds of things that qualitative research deals with such as patient satisfaction and quality of life. But the arrangement has a limitation: it does not tell us that diamond is three times as hard as wood because our series gives no indication of how much harder these objects are than each other. The important point is that when qualities are arranged in a series and identified with numbers, the use of those numbers to perform calculations like averages or percentages is meaningless, as the relationship between points 1 and 2 and between 5 and 6 in the series may be completely different. Distinctions between qualitative entities can very often only be expressed through descriptions like 'more and less' or 'better and worse' as they have no true numerical meaning.

The third way in which numbers are used is to describe quantitative relationships between things. Examples here might be weights or distances or amounts of things. If we take one bag of sugar to weigh 1 unit and balance a similar bag of sugar opposite it so that neither bag sinks, we can say that the second bag also weighs 1 unit. We can then take a bigger bag of sugar and balance it against the two smaller bags such that neither side sinks and say that the bigger bag weighs 2 units. In this way we can construct a scale of measurement for the bags of sugar. This use of numbers is appropriate for properties that are additive. It applies to the quantitative analysis of scientific research such as the measurement of blood pressure or blood levels of a drug or

cholesterol. Unlike the case of the series, the distances between the points on these scales are equal and, therefore, we can construct measurements of means with standard deviations and talk of scales and percentages with meaning.

(b) Scales and qualitative research

But what if the subject of the measurement is not an additive entity? For instance, can the degree of patient satisfaction with a doctor or of quality of life be described using a scale? Most qualitative research does not deal with qualities that are additive, so what are the problems of employing scales as a method of presenting its results? There are four main ones:

1) Ensuring that it is the same quality that is being measured from the highest to the lowest points on the scale.
2) Making the quality continuum explicit i.e. is it possible to distinguish between discrete points along it?
3) Establishing 'the equality of differences'[41] i.e. that each point on a scale is the same distance from another.
4) The effect of the observer on the construction of the scale and the measurements taken by it.

1) This problem can be illustrated by a study on doctors modes of dress[42]. The researchers acknowledged that they might not be measuring the patients' reactions to the pictures of doctors presented to them in the study but rather attitudes based on what the patients were used to in their own doctors. It is particularly when a respondent expresses an extreme view that the attitude under consideration may

turn into something different. In this example, extreme disapproval of a casual mode of dress may reflect a personal dislike of wearing jeans rather than any view as to what it is appropriate for a doctor to wear.

2) The second problem is whether it is possible to distinguish between discrete degrees of a quality along its continuum. Unless this can be done it is impossible to use numbers in any way, even as labels, as each point has to be clearly distinguishable from the next. Likert[43] encountered this problem in his description of a scale for the measurement of attitudes. His method depended on the construction of a statement to which people of different points of view would respond differentially according to the strength of their view from 'strongly approve' to 'strongly disapprove'. He gave an example of American attitudes toward Japan. A more appropriate example for the UK currently might be attitudes towards Europe. In a referendum on closer integration with Europe, a statement like 'Britain should follow Germany's lead and favour complete integration with Europe' is likely to produce a predominantly negative response. It is difficult to think of a statement which would accurately reflect the spread of opinion on this subject but suggesting that Britain should follow Germany's lead certainly would not. Likert scales are in common use in qualitative research[44] and great care needs to be taken in the construction of the statements employed particularly if the researcher is constructing a scale of 4 or more points.

3) This problem involves ensuring that the discrete points are at equal numerical distances from each other:

> 'We must be on guard against a common error. It is often believed that because we can assign numbers to different degrees of a quality, the different degrees will always bear to each other the same ratio as do the numbers we have assigned to them. This is a serious mistake, and arises because it is supposed that measurement requires nothing more than the assigning of numbers.' [45]

From the preceding consideration of numbers and their use it seems that the distinction between the second use (that of numbers arranged in a series) and the third (that of numbers to make quantitative distinctions) has become disregarded in some qualitative research. As an example of this, as part of a study looking at quality of care in general practice in Australia, Winefield et al.[46] measured doctor's satisfaction with a consultation using a visual analogue rating scale with points ranging from 0 = completely unsatisfying, to 5 = average in satisfaction, up to 10 = completely satisfying. The result of this analysis was expressed as a mean score of 8.95. This kind of method is valid in as much as it uses numbers in the first and second senses : both as labels to stand for certain doctor responses and as a method of placing responses in a series such that a score of 1 is considered less satisfying than a score of 2. However, this method does not establish a *scale* for the measurement of satisfaction as we cannot say that the amount of satisfaction between a score of 0 and 1 is the same as that distinguishing a score of 2 from that of 3. To express the scores as a mean presupposes the establishment of a scale and is therefore invalid.

4) This problem deals with the effect of the researcher on the construction of the scale and its use in measurement. In quantitative

research, measurement and the use of scales is straightforward. The scales used are generally well established and are not dependent on the factor being researched. If we want to measure blood pressure, for instance, the mercury sphygmomanometer exists and all that need concern us is the precision of the reading taken by the observer. The measurement is objective as the instrument has not been devised by those carrying out the research. This is qualified, however, by the fact that in all measurement we do not just measure x but rather the situation which combines x and the effect of the measuring instrument y[47]. Thus with the case of blood pressure measurement we may not get a result which is the true blood pressure (x) but rather a reading (xy) which is different because of an error made by the observer or the measuring instrument.

In qualitative research the margin for such error is much greater as the researcher is himself often one of the research instruments. Because qualitative research aims to 'study things in their natural settings'[48] methods of measurement may have to be devised specifically for the quality under consideration in the context in which it appears. As an example of this, Law and Britten[49] use a method of measuring patient-centredness devised by Henbest and Stewart[50] to assess doctors' consulting styles. The measurement is based on scoring doctors on the basis of their response to a 'patient offer' i.e. anything the patient says which is of potential significance. If a doctor does not respond he scores 0; if he responds with a closed question he scores 1; if he allows the patient further expression he scores 2; and if he actively facilitates

the patient's expression he scores 3. Audiotapes of the consultations were used for analysis.

But in this study the researchers were the most significant factor in the resulting score xy (which combines the effect of the instrument, y, with what is measured, x) as they were the ones who were analysing the audiotaped consultations and deciding on scores. Thus the researchers using this tool would listen to everything the doctor said as a reflection of his patient-centredness, and silence would score 0. But, in the true situation, silence might reflect the fact that the doctor knew the patient very well and might not need to say anything or might need only to touch the patient's hand to encourage them to express their concerns more fully. Even if the researcher were directly observing the doctor-patient interaction he would be interpreting the doctor's response for the scoring system. Would he count a smile from the doctor as active facilitation of the patient's expression or not? The main point is that the measurement tool might distort what is being measured and may turn a positive response into something negative.

There are, therefore, problems both with establishing that qualitative analysis is amenable to the use of scales at all, never mind whether numbers can be used in that analysis. Even when numbers are used in a series it is important to indicate their direction e.g. that 1 represents very satisfied and 5 very dissatisfied rather than the other way round. This is entirely at the discretion of the researcher and reflects how meaningless as numbers these labels are. Letters of the alphabet could just as easily be used except that they are limited to a series of 26.

The conclusion of this discussion is that the results of qualitative research cannot satisfactorily be quantified. They cannot because of the nature of the subjects under consideration (i.e. subjects such as doctor or patient attitudes); because the research is context-specific (i.e. describes a particular hospital clinic or general practice); and because of the researcher influence on the measurement process. It follows from this conclusion that we cannot use the procedures of scientific induction to generalise these results; and if they cannot be generalised, how can they be of benefit to clinicians? All research aims at increasing our understanding, but for *clinical* research to be worthwhile it additionally needs to produce some lessons for wider clinical practice. Can qualitative research do this? This takes me to the second question: Granted that qualtitative research cannot use scales, is it scientific?

(c) Generalisability and qualitative research : a route to understanding

In considering the question whether qualitative research can be considered scientific even if it is not quantitative I shall refer back to my analysis of Robert Hooke's account of meteorology (1.2.1). It seems clear that qualitative research can satisfy some, but not all, of these criteria. Thus, it clearly involves observation, the recording of these observations, perhaps the use of 'instruments', such as video recorders, (even if not 'experimentation'), observation of the effects produced by the phenomenon under consideration (such as the effect of the doctor on the patient), the formation of hypotheses about causation,

observation over a period of time, and no doubt others. I have suggested that where qualitative research goes wrong is in its attempt to adapt itself to other aspects of science, such as measurement, with the reductivism that that entails. Thus, in order to try to generate measurement, 'patient-centredness' (for example) becomes reduced to, or defined in terms of, a few operations, such as 'making eye contact'. But, as we have seen, qualitative research cannot satisfy the measurement criterion. Can it satisfy the generalisability criterion? This is more important, since generalisability, as I have suggested (1.2.2) is perhaps a necessary, if not a sufficient, condition of the scientific. And it is certainly a necessary condition of qualitative research being useful to clinicians.

The qualitative researcher cannot generalise by means of the usual procedures of scientific generalisation - induction from a range of relevantly similar instances. He cannot do this because, as we have seen, induction, in the clinical situation, requires the researcher to ignore the many complexities of human encounters and concentrate on only a few. How then, if at all, can the qualitative researcher generalise? The lessons of qualitative research for clinicians are derived from considering the plausibility of the particular situation in terms of their own and on finding parallels which are helpful. The question for the reader of this material is 'Are there any universal features in this situation which I recognise and can apply?' Understanding in qualitative research is, therefore, more akin to the understanding gained from an art or, perhaps, philosophy than from a numerical science. This does not mean that it is an inferior kind of

understanding, but it does mean that it is different in that it is reached by a different route. It requires the active participation of the reader to identify with the situation and relate the findings to his own situation. Consider the following example from Sartre[51]. Sartre describes a man bending down to listen at a keyhole. He believes his wife is in the room with her lover. Suddenly he hears a step behind him, and immediately his attitude changes. To begin with he wanted to hear a conversation, but now he has become an object to someone else - an eavesdropper to be described and despised. Sartre uses the example to show how we cannot think of ourselves as separate from others. But we could also use it to show that moral emotions, such as shame, are experienced in a social context. The eavesdropper minds being caught, not for any utilitarian-type reasons, but because he must now think of himself as mean and sneaky. He despises such characteristics in others and now he must despise himself. This constitutes shame.

I have used this example because it is similar to many in qualitative medical research. The route to understanding is through our identification with the situation to universal features of human emotions. There is an element of generalisation, but not by induction. The imposition of quantitative language obstructs this understanding by distorting the findings of qualitative research and making them obscure to the reader. Even if the approach of such research is narrative and descriptive of particular situations it is still aiming at providing understanding of general features of clinical situations. In presenting its results it might, therefore, do well to follow the example of philosophy and use words. Qualitative researchers take pride in the

fact that their approach sheds new light on clinical situations. They should not hide this light under a numerical bushel but illuminate it with language which reflects the new kind of understanding they wish to convey.

In sum, then, is qualitative research scientific? I have claimed that the activities of science make up a large family. Qualitative research has some of the family characteristics, but it gives generalised understanding by a different route. I shall now move to the third idea of medical research - clinical trials - and examine their scientific credentials.

1.7.3 Clinical trials

Awareness in medical circles that much medical research on treatments did not meet the strong criteria of proof demanded by the natural sciences led investigators to seek statistical techniques which would establish degrees of confidence for the conclusions of empirical studies. The idea is a simple one. If a form of treatment is of uncertain value, or if there is doubt about which of two treatments is the better, patients are randomised to one or other, and the outcome is assessed by statistical methods. There are refinements called 'double blind' studies in which neither the patient nor the doctor administering the treatment know who has been given the drug and who the inert substance. There are further refinements called 'cross-over studies' in which following a period with drug A the patient is switched to drug B. Cross-over studies can also be double-blind. My concern here however is not with the detailed technicalities of clinical trials but with

the question of their scientific status. It must also be stressed that settling the question of the scientific status of clinical trials does not in itself settle the question of the effectiveness of treatments in a clinical examination with a patient. A drug which a trial has pronounced efficacious might not be effective with a given patient. Indeed, a drug which a trial has declared to be non-efficacious might still be effective with a given patient in a clinical examination. This issue I shall discuss in the next chapter and concentrate for the moment on the scientific status of clinical trials.

There is no doubt that the randomised controlled trail (RCT) is widely regarded as one of the most important developments in medical research in the last fifty years and it has been applied widely to the study of treatments in almost every area of medical practice. It is thought to provide the basis for 'evidence-based medicine' and as such it is regarded in medical research as the 'gold standard'. And it certainly satisfies some of the criteria for science. Thus it involves observation, the recording of observations, observation of the effects produced by the phenomenon under consideration (such as the effect of a drug on a disease), perhaps the formation of hypotheses about causation, and, certainly, observation over a period of time. Unlike qualitative research it can undoubtedly use numbers since it is avowedly reductivist as it deals just with, for example, drugs and diseases, and discounts the human factors. But purely as science it suffers from a large defect. In discussing the nature of science I suggested that scientific endeavour is directed at systematic understanding. It is systematic understanding which, as Smith says

(1.6) 'soothes the imagination'. But what the RCT offers is at best a statistical probability that a treatment will work. I say 'at best' for it has been argued that even beginning a study changes the outcome of the condition studied, probably because of the greater care and interest shown by the research team[52]. What we find in the RCT is science in the Baconian sense of empirical studies of what might 'work' in a statistically significant set of cases. As we have seen, however, the activities which might be regarded as 'scientific' make up a large family. In terms of the family metaphor the RCT is a cousin!

While it might be a 'gold standard' in estimating the efficacy of treatments the RCT is hardly a gold standard in science. It is at the 'natural history' end of science in that it is recording correlations without purporting to offer any understanding of why they are correlated. But true science, as Smith says, seeks the connecting principles of nature, rather than what seems to work in some cases.

1.8 IS MEDICAL RESEARCH SCIENTIFIC?

I began by distinguishing three different sorts of medical research: (a) into the normal and pathological workings of the body; (b) into the doctor-patient interaction (qualitative research); (c) the RCT.

It emerged that (a) is clearly scientific whereas (b) and (c) are much more doubtfully so. What are the basic differences between (a), and (b) and (c)? There are two basic points of differences which explain why (a) is true science whereas (b) and (c) are on the fringes, are cousins of science.

The first is that science by its very nature is reductionist. The scientist must isolate the phenomena to be investigated. Galileo or Newton, for example, concentrate on the primary or measurable qualities of matter, or employ idealisations such as 'frictionless plane'. The basic medical sciences - biochemistry etc. - are similarly reductionist. They can therefore work effectively as sciences. But (b) is concerned with actual human behaviour and the reductionist attempt here - in the use of scales, for example - is bound to fail. Research of this kind is based on holistic assumptions and the use of reductionist quantitative methods can produce only distorted results or half truths. Turning now to (c), the RCT, we find that it too attempts to use reductionist quantitative methods. The methods are reductionist in that they are abstracting from the complexities of actual clinical encounters. For example, they totally ignore the greatest asset of medical practice - the doctor-patient

relationship. Once again, half-truths are all that emerge, and moreover half-truths without any systematic basis.

The second reason why (b) and (c),but not (a), are not fully scientific is that (a), like true science, is driven by concerns internal to the investigations, whereas (b) and (c) are driven by goals external to the investigation, such as the search for efficacious treatments. In the words of Bacon: 'Truth therefore and utility are here the very same thing.'[53] But such an attitude is not that of the scientist searching for the systematic understanding provided by the 'connecting principles of nature.'

1.9 CONCLUSIONS

1) Science can be characterised in terms of a method, a certain use of evidence, and an aim.

2) The method is complex but involves observation, hypothesis formation, and further experiments. Evidence has a particular logical place in scientific method.

3) The aim of science is primarily to achieve a particular sort of systematic understanding, although there is also an empirical, Baconian tradition which sees the aim of science as utility.

4) Science involves the imagination, which is stimulated by irregularities and satisfied by wider systems.

5) Medical research involves (a) basic biology and pathology, (b) qualitative research, (c) RCTs. Central scientific demands are fulfilled in (a), but (b) and (c) are in different ways on the periphery of science.

CHAPTER 2

THE CLINIC

2.1 INTRODUCTION

I have argued that if we adopt a broad interpretation of 'science' we can assert that all medical research is in some sense scientific, or evidence-based, although not necessarily quantitative. It follows from this that the research base of clinical practice is scientific in a broad sense. It does not follow, however, that clinical practice itself is, or indeed ought to be, fully scientific or evidence-based. If medical research is 'science' my question in this chapter is: To what extent is a clinical consultation simply a matter of applying that science? It will emerge that there is much more to the consultation, or to good clinical practice, than simply applying science, or applying the evidence, to a given patient. My discussion will be concerned with the extent and nature of the 'much more'.

Basically the difference between medical research and clinical practice is this: medical research is concerned with providing generalised, systematic understanding, or at least with discovering statistically significant correlations, whereas clinical practice is concerned with establishing the diagnosis, prognosis and treatment of individual human begins who happen to have illnesses, diseases, injuries or other maladies. The question then arises: How far can the inherent reductivism of scientific research be adapted to the holism of the individual consultation? More simply, I am asking how far does

evidence-based medicine fit in with the central activities of clinical practice during consultations? What is the balance between evidence and humane judgement?

2.2 CLINICAL JUDGEMENT

The doctor who has listened to a patient's account of what is wrong and is faced with research evidence of treatments will, in the end, make a judgement about the best course to follow for the patient. What are the components in this clinical judgement? The good doctor, the one (as we shall see in chapter 3) who has a 'humane attitude', will see the need: to individualise the generalised evidence; to listen to the patient's stories about the origins of their problems; to interpret these stories and gain insight in to the root of the problems; and to obtain consent for any proposed treatment. I shall show in chapter 3 how all these requirements for a good consultation relate to humane understanding and judgement.

But in this chapter I shall consider how generalised evidence is individualised; how 'anecdotes' or stories are relevant to the clinician, but require interpretation; and what consent means to the good clinician. These are the components of clinical judgement. They can best be illustrated in an example of a consultation.

2.3 A CLINICAL EXAMPLE

Consultations may be classified in different ways: behaviour orientated models emphsise the doctor's activities,[54] [55] whereas task-orientated models suggest a series of predefined activities to be completed[56]. I will use the task-based approach of Pendleton[57] - a model applicable to hospital and general practice - to assess the kinds of evidence used by doctors at various stages during the consultation. My fictitious patient is Mrs Mackay, a 70-year-old widow who suffers from osteoarthitis and non-insulin-dependent diabetes (NIDDM).

Mrs Mackay has been recently widowed and now frequently attends her general practitioner's surgery. Following the Pendleton model, the doctor's first task is to explore Mrs Mackay's ideas and concerns about her symptoms and to discover what she expects the outcome of the consultation to be. On this occasion Mrs Mackay complains of dizziness and appears to be very anxious about this symptom. The important evidence during this stage of the consultation is the patient's story and her associated behaviour[58]. Exploration of Mrs Mackay's concerns, ideas and expectations allows the doctor to discover what conclusion the patient has drawn about her symptoms. Thus the doctor can tap into the patients' health beliefs and the sources of these beliefs. These sources can be diverse and include anecdotal evidence from family, friends, family traditions, television programmes, and magazine and newspaper articles. Mrs Mackay believes that dizziness means that her blood pressure may be high; her experience with her husband (who had hypertension and died from a stroke) tells her that

she is at risk of imminent death or disability, and she is therefore anxious.

The doctor's second task is to consider the reason for attendance in sufficient detail to reach a diagnosis before moving on to review any other difficulties and risk factors. Scientific evidence has a greater role here than in the preliminary discussion with the patient. Mrs Mackay's blood pressure is, indeed, high (170/100 mmHg) and this is the third time it has been raised. Has there been any renal damage associated with her diabetes? Are there any other underlying factors, such as alcohol abuse or depression? The doctor then reviews Mrs Mackay's glaecemic control and discovers that at the most recent measurement of glycosylated haemoglobin (HbA1c, a measure of blood sugar levels over the preceding 3 months) the concentration was raised.

The doctor's third task is to chose an appropriate action for the problem. Here the doctor must consider the evidence on the specific clinical problem (in this case hypertension) and that relating to the individual patient. According to the rules of evidence-based medicine Mrs Mackay needs treatment and one option for a woman of her age is a thiazide diuretic[59]. Mrs Mackay is at risk of stroke but she also has NIDDM and is taking an oral hypoglycaemic agent; her diabetes has been poorly controlled since her husband's death . Should the doctor put Mrs Mackay at further risk by prescribing another medication that might interfere with her glycaemic control? Mrs Mackay has osteoarthitis and poor mobility; will increased diuresis exacerbate her problems? On the other hand, Mrs Mackay believes that high blood

pressure leads to stroke, and from what the doctor knows of this patient, any additional anxiety during her bereavement might make it difficult for her to cope. The decision to use the evidence in the context of the consultation is a matter for clinical judgement; the doctor must think about the patient's multiple pathology and drug treatments, and, most importantly, whether any new treatment is acceptable to the patient herself.

The doctor's fourth task is to ensure mutual understanding between doctor and patient and shared acceptance of the selected further action or treatment. The doctor must, therefore, move towards the patient's own unscientific view.

The final task is for the doctor to establish and maintain a therapeutic relationship with the patient. Such a relationship is tremendously beneficial for the patient; indeed the placebo effect of the 'drug doctor' cannot be easily assessed by an evidence-based approach.

From the example of Mrs Mackay we can analyse what evidence is available during the consultation. The primary, and most important, source of evidence for clinical decision making is the information that Mrs Mackay communicates verbally and non-verbally. The doctor's pre-existing knowledge of the patient is supplemented by medical records - available information includes not only the formal medical history and examination, but results of investigations.

The information-processing model of decision-making (see appendix 2.1) shows how the different features of a patient's illness - history, examination and other findings - are converted by the doctor into useful information. In the doctor's 'working space' this information is filtered by the various sources of medical experience that have influenced the doctor. The capacity of the working space is limited by the number of items that can successfully be integrated. Johnstone and colleagues[60] have shown that this capacity varies from three to eight items. This finding is supported by medical studies that show that the successful management of clinical cases depends on only a few critical factors[61]. When scientific evidence is not immediately available to the doctor from memory, computer screen, or paper, the additional time needed to search for this information may cause overcrowding in the working space and reduce performance.

The most important perception filter is the doctor's undergraduate studies. The knowledge, skills and attitudes of doctors reflect the medical orthodoxy at the time of their qualification. This wisdom diminishes after the final exams[62] and may not be updated with new information. In addition, much of the evidence taught in postgraduate courses is of limited value to the practitioners at whom it is directed[63]. Many doctors read the available medical literature for up to four hours per week[64] but even the most dedicated practitioner cannot critically appraise and assimilate the deluge of evidence published on a daily or weekly basis. Furthermore, much of the evidence is hard to find, or is outdated, or simply wrong[65]. To each of these formal types of evidence might be added clinical experience - which may be direct or

indirect - from cases discussed with colleagues and reviews in case-series, clinical trials, or individual case-studies.

Current theories about how professional integrate this diverse evidence into the routines of their daily practice suggest that doctors become more expert in the use of evidence in consultations by remembering the illness scripts of previous patients[66]. This theory explains how clinical experience and the ability to learn from those experiences can modify clinical expertise and practice. Knowledge of different case scenarios leads to a more rapidly accessed store of illness scripts in the doctor's working space. Information from many sources is compared with that for the patient in the consultation and the enabling conditions, predisposing factors, boundary conditions, faults and consequences of the case are compared with those stored in the doctor's long-term memory. The doctor uses this comparison to make a diagnosis and assess the outlook for the patient. When Mrs Mackay's illness script (see appendix 2.2) deviates from those with which the doctor is familiar the resulting uncertainty may lead to a decision to seek further evidence or refer the patient to a colleague whom the doctor believes has greater experience of this type of problem.

The analysis of this fictional consultation does not give prominence to the practice of evidence-based medicine. Rather, the doctor seems to apply a sliding scale of importance to the evidence from different sources that depends on the specific illness and the patient.

Scientific evidence should come from the most valid and reliable source, which is usually up-to-date, peer reviewed papers. New rapid means of information delivery should provide the doctor with just enough information for them to make a judgement appropriate to each patient in the limited time available during consultations. However, the evidence itself is no substitute for clinical judgement; evidence must still be interpreted and applied to he individual patient. For example, in autumn 1995, there was controversy about the combined oral contraceptive pill[67] : doctors objected because they had been given the conclusions derived from the studies concerned before the studies themselves were published and available for scrutiny. This meant that the full details were not provided for them to judge whether the data applied to individual patients.

Furthermore, an evidence-based approach views the evidence from randomised controlled trials as the most valid. However, in the consultation the doctor deals with an individual patient. The results of randomised controlled trials that involve large numbers of participants may not be applicable to a specific case[68]. As I argued in 1.7.3, randomised controlled trials produce an oversimplified and artificial environment which may bear little resemblance to day-to-day reality. Indeed, even when the evidence is good, it does not necessarily have to be applied. Other important factors, not least of which is that the patient may not wish to take the treatment, need to be considered.

Evidence-based medicine constructs a hierarchy[69] with randomised controlled trails and the top and evidence from clinical experience or

shared stories about other doctors' patients at the bottom. The above analysis of consultation tasks suggests that at times experimental, and at times anecdotal evidence will be the most important part of understanding the patient's condition and implementing treatment through a good doctor-patient relationship (see appendix 2.3). The decision about what kind of evidence is the most important is a matter for clinical judgement and is part of an interpreted and individualised approach to medical practice.

Evidence-based medicine can benefit medical practice because it will help ensure that all patients have access to the most up-to-date and well-validated evidence through their doctors. However, patients are not clones and doctor are not automatons. All patients differ subtly in their presentation of illness, in their understanding and acceptance of medical advice, and in their response to treatment. Doctors need to know the latest research but should apply new advances with judgement and an awareness of the unique circumstances of the individual patient's case.

Twenty years ago Feinstein wrote:

> 'Until the methods of science are made satisfactory for all the important distinctions of human phenomena, our best approach to many problems in therapy will be to rely on the judgements of thoughtful people who are familiar with the total realities of human ailments.'[70]

Information technology has helped to make evidence available from a variety of sources during the consultation. Science, however, is

unlikely ever to be able to make all the necessary distinctions required to answer all the questions that patients bring to their doctors. Medicine will always require thoughtful doctors who are able to filter the evidence appropriate to each patient through an interpreted and individualised approach. Let us consider further the nature of individualised evidence.

2.4 INDIVIDUALISED EVIDENCE

2.4.1 The detective model

Scientists are not the only professionals to be interested in evidence. Detectives, for example, are interested in evidence. As we have seen (1.3.1), the role of the detective, as suggested by Sherlock Holmes, is to amass all the material relating to a case and then formulate some hypothesis as to its solution. I have argued that Holmes has a different view of the relation between evidence and hypothesis from that of the scientist, but there is another important difference, relevant to my present clinical concerns, between the scientific and the detective model of evidence.

Let us imagine that the Duke is found murdered in the library. The investigating detective takes statements from many people - other family members, maids, gardeners and the butler. These statements are the data concerning the case. The detective then formulates the hypothesis that it was the Duchess's lover who committed the crime. The information relating to the lover's involvement then turns into evidence because it relates to a particular hypothesis in the case. However, the detective then turns up a convincing piece of counter-evidence, an alibi for the lover. A new hypothesis must then be formulated - that the culprit was in fact the butler. And so the process goes on.

This 'detective model' of evidence is similar to the scientific model in important respects - the collection of data, the observations, the chance

discoveries, followed by the formulation of hypotheses which transform some of this information into evidence and suggest how other evidence (for or against the hypotheses) might be found. But it is unlike the scientific model in at least this important respect. It is not logically possible to generalise. The evidence is relevant to one and only one situation. Both the scientific and the detective models have truth as their goal, but in the one case it is general truth, and in the other it is truth specific to a situation. This is an important difference, and it is one which highlights the need for insight. Moreover, the nature of the insight involved seems not unlike that in the scientific model, for it requires the sifting and evaluation of information and findings and the relating of these to hypotheses. Once again, this sort of insight requires technical knowledge.

2.4.2 Medical evidence

Let us now look at the application of these models to the medical context. Does the use of evidence and judgement in medicine have more in common with the work of a detective or with that of a scientist? It might seem that medicine uses both models. On the one hand, the work of clinical *research* involves rigorous application of the science model to clinical problems. The aim of research studies is to establish truths about clinical diagnosis and treatment which will be true for all common situations. It might also seem that, on the other hand, if we look at the work of clinical *practice*, the work of the individual doctor in the surgery or clinic, this has more in common with the work of the detective. The taking of a clinical history parallels the taking of statements of witnesses to a crime and the examination

process is like the rigorous examination of the crime scene. The doctor is here amassing unstructured data which he will then use to suggest a diagnosis (the hypothesis) and will attempt to establish the truth of that diagnosis by further examination (through X Rays, laboratory testing of blood samples etc.). These two kinds of activity are quite different but they have this in common: both are concerned with discussing truth, the generalised truth of science or the specific truth of diagnosis, and both involve a similar sort of technical insight.

Clinical practice, however, has two aspects to it: diagnosis (and for present purposes we can include prognosis under this heading) and treatment. Now, of course, the proponents of evidence-based medicine will correctly say that it is precisely at the point of treatment that scientific evidence is relevant, that it is a matter of scientific truth that some treatments are more effective than others. But the clinician is not concerned with treatments in the abstract. The clinician is concerned with treating *this* specific patient, and the treating of patients (as distinct from 'evidence-based treatments') requires the clinician to be influenced by many factors other than truth, such as the consent of this patient, the meaning of the disease for this patient, how important the side effects are for this patient, whether this patient has heard of the treatment, the family supports, and perhaps even the cost. These factors have nothing to do with truth, whether general or specific. This point about the aim of clinical treatment leads me to propose a third model for evidence as it is used in medicine. This model involves a different sort of insight which is peculiar to clinical treatment.

2.4.3 A model of evidence in clinical medicine

This third model I will call the 'treatment' model of evidence. Kathryn Montgomery Hunter described the patient as

> 'provid[ing] the text that medicine must read and make sense of and explain'[71].

She focuses on the importance of the individual patient as the primary source of evidence that the doctor requires to assess in the light of the presenting complaint. The process does not stop there, as it might in the context of detection or science, as the doctor must then initiate treatment appropriate not only to the specific condition but also to the specific patient. Doctors must, of course, have in their minds a knowledge of evidence-based treatments, but this part of the process also involves an assessment of other sorts of question : will the evidence relating to this patient suggest that they will be able to comply with treatment? Is it clear that the patient understands their condition and trusts the doctor's conclusion sufficiently for the benefits of the placebo effect to come into play? Is the treatment appropriate for the social situation of this patient?

For instance, evidence-based medicine might suggest that in mild to moderate acne a topical antibiotic preparation is as effective as a course of oral antibiotics. But consider the case of Susie, a 17 year old who has recently started on the combined oral contraceptive pill and attends her doctor with acne, compared with that of Liz, a 21 year old presenting with the same problem, who is about to get married and is on a three monthly depot progesterone injection for contraception. Both have mild to moderate acne but Liz may wish to keep her face

clear of medications on her forthcoming honeymoon and Susie needs to avoid oral antibiotics which might interfere with her pill. In this case, therefore, social circumstances might dictate that Susie gets the application and Liz gets the tablets. However, if Susie declares that a friend of hers got antibiotic tablets and his acne disappeared 'like magic', the wise doctor would comply with the patient's desire and make use of the additional benefits that the patient's belief in the treatment might convey.

In the context of this model we now see the paramount importance and peculiar nature of the insights of clinical judgement. We have seen how insight is relevant to assessing relevance, weight and drawing conclusions (chapter 1), but insight comes into its own when we deal with the range of complex factors in the clinical situation. This is a different sort of insight, and requires different abilities. The judgements of the scientist and the detective are technical; that of the clinician is based on what Aristotle calls *phronesis* or 'practical wisdom'[72] . It is certainly true that medicine is in some respects a *techne* , a skill-based activity[73], whose practice requires the exercise of specific skills relating to diagnosis and treatment (see 3.2). It is in this sense that the insights of medicine are like the technical ones of science and detective work and relate to conclusions that are either true or false. But medicine involves more than this; it involves a 'capacity to act with regard to the things that are good or bad for man.'[74]. When doctors have to come to a decision about treatments for individual patients - in other words, have to make judgements relating to 'the things that are good or bad for man' - this is not the same as making

judgements about what is or is not the case. The insights of the consultation have more to do with what is or is not appropriate for this patient, with this condition, and at this time.

2.4.4 Provisional conclusion

There are several sorts of evidence each with its own correlative sort of insight or judgement. In the case of the medical scientist the evidence comes from, say, randomised controlled trials (1.7.3), which suggest the percentage success or failure of treatments[75]. The correlative judgement is technical and is directed at generalised truth. It is often said that clinical treatment applies this scientific evidence to individual patients[76]. This is certainly part of the picture; that part in which diagnostics is like detective work. The correlative insights of the clinician are in this respect like those of the detective and aim at individualised truth about a given patient. But the other part of the clinical picture concerns treatment. Evidence about what constitutes the best treatment for a given patient involves a wide range of imponderables, but especially a patient's own (perhaps irrational) perspective. The correlative insight in this case can be only partly technical (i.e. based on evidence-based treatments) because it must tap into the belief system of the patient, and, indeed, of the doctor. These insights do not aim at truth but at effective treatment. Hence, the judgements or insights of the good clinician must be more than technical; they must show practical wisdom.

2.5 ANECDOTES

In the scientific, evidence-based atmosphere of contemporary medicine there is a tendency for doctors to believe that they can ignore the patient and concentrate on the disease, which they believe can be identified scientifically. The practice of ignoring the patient and concentrating on the disease is certainly ethically objectionable, but my concern here is that it is also neglecting an important source of information about the patient - the patient's own story. The patient may be telling the doctor what is wrong, but this kind of clinical evidence is often dismissed as 'anecdotal', where that term means that it is not worth bothering about. But I shall try to show in this section that anecdotes have an important function in the consultation, if not in the laboratory, and must be taken seriously by the good doctor.

2.5.1 What are anecdotes?

There appear to be two senses in which the word 'anecdote' is used. The first sense can be found in the sentence, 'And I would like to tell you an anecdote about this', and the second in, 'That's purely anecdotal.' The first sentence indicates the major sense of the word. The speaker is about to tell a short story illustrating a point he is wanting to make in a form which is more dramatic than merely stating the point. This introduction will frequently be followed by, 'I remember when I..' or, 'I knew a man once who..' and the account may be fictional or non-fictional. In the medical context, anecdotes are largely non-fictional but in other contexts, such as in the world of stand-up comedy, they are often made up or may be reality

embellished for effect. Many of the warning stories told to children are anecdotes of this latter type. For instance a mother might tell her child: 'I remember a little girl who once played too near the river and she fell in and was never found'. This anecdote briefly but dramatically illustrates the dangers of playing near the river. It may well be true that the mother knew a child who fell into the river but her death and disappearance are more likely to be embellishments calculated to make the story stick in her child's mind.

Another fruitful source of anecdotes is the obituary pages of the newspapers. Here is an extract from one of an English painter who died recently:

> '..though he had his moments of ready conviviality he never really belonged to the art world. Possibly his personal background had something to do with this. He was born into a working class family in Lancashire... It is recorded that when his father asked him what he thought he wanted to do for a living, and he answered that he wanted to be a painter, his father was very happy, assuming that what he wanted to paint was houses.'[77]

The obituary differs from biography in that it must give a brief account of the person's life with some (often rather flattering) reference to their character. Anecdotes are often included as memorable stories about the person's life which also, as here, serve to illustrate or account for a trait of character. Here the painter's humble origins are told and the anecdote about his father's mistake serves to illustrate that those origins and upbringing were sufficiently strong to make him less inclined to join in with the parties and glamour of the art world.

The second sentence, 'That's purely anecdotal' gives a related but different sense of the word to the first. 'Anecdotal' information or evidence is information derived purely from anecdote and (as is usually implied) is not to be relied upon. It is not reliable because of the features which distinguish the anecdote: that it is a short, dramatic account told for effect and liable to be embellished. The word 'anecdotage' has occasionally been used[78] to describe the activity of telling or making use of anecdote and its derogatory meaning is made all too clear by its relationship with 'dotage'. In medicine in particular, the term 'anecdotal' has developed a pejorative meaning, particularly so in recent times when doctors have been much concerned with evidence-based medicine. It is this recent emphasis which has been put on the scientific evidence base of medicine which has led many authors to reassert the importance of other information including stories[79] and anecdotes[80] as part of that evidence-base. But, as we shall see in the following sections, anecdotes are an important source of treatments, diagnoses, and even therapy. Let us begin with doctor-doctor anecdotes a source of treatments.

2.5.2 Doctor-doctor anecdotes

Anecdotes are told in all situations, formal and informal, where doctors get together. One good but trivial reason for this is that everyone enjoys a story. Stories enliven dull conference proceedings and serious medical meetings. The anecdotes told by doctors at these formal meetings can be lighthearted and aimed at lightening the atmosphere. More usually the anecdote is told from the doctors own experience for a good reason and the telling of anecdotes is so much a

part of communication between doctors that the teller may not even be consciously aware of that reason. Katherine Mongomery Hunter in her book *Doctor's Stories* underlines this point. Her book amounts to an anthropological study of 'doctors in the wild' and she sees the telling of anecdotes as instinctive medical behaviour. She characterises the ideal environment for anecdote-telling in this way:

> ' In general, it seems that the smaller and more regular the group and the more its members are engaged in the same clinical activities, the more anecdotes will be told.' [81]

The kind of setting described here is most likely to be a ward round or hospital unit or general practice case conference. But anecdotes are also told in formal settings such as at conferences, hospital meetings and in written form in journals. Usually the story has an illustrative function. At a conference presentation, alongside the scientific data on a new therapy, for example, a case may be cited as an example of how well the therapy worked. The cited case is usually one in which the therapy worked particularly well, or alternatively, a case in which the therapy was a complete failure. Anecdotes are generally dramatic stories and do not recount the commonplace, so these stories serve to illustrate the best and the worst of the therapy and the audience are given the scientific evidence to assess as well. Anecdotes, in this setting, have a role in drawing the doctor's attention to the promise and pitfalls of new treatments when they are proposed.

In the discussion which follows a conference or case conference presentation, the audience will often use anecdotes to provide counter-

examples to what has been presented: ' Your patient may have responded in that way but I tried that in a patient of mine once and she nearly died'. Because anecdotes by their nature are memorable, one told by a speaker may stimulate the memory of another in a doctor in the audience and will produce a discussion on the usefulness of a therapy under a different set of circumstances in another patient.

These examples point to the value of anecdotes in continuing medical education as they provide real examples and counter-examples on which practising doctors can hone and test their medical knowledge and keep it up to date. Such anecdote swapping also enables doctors to test their clinical judgement against that of their peers and sharpen it. But anecdotes are also in frequent use in undergraduate medical education. Clinical teaching in the wards goes on around the bed of a patient with a particular illness and clinical signs. Frequently the clinician who is doing the teaching will make reference by anecdote to other similar cases which they have come across for comparison. Besides this, the teacher will also put forward hypothetical situations such as, ' What if this patient *had* had an MI? How would this change your management?' These scenarios we might regard as hypothetical anecdotes and they serve to extend the educational value of the single case.

Anecdotes are often told to students about the great medical figures of the past often to illustrate the importance of some very basic medical truth. One such example is a story told of the great Sir James

Mackenzie, a general practitioner and pioneer in the field of cardiology in the early part of this century :

> ' Mackenzie was making a weekend visit to his university city of Edinburgh. A surgeon invited him to give his opinion on the circulatory condition of a woman in a ward at the Infirmary, awaiting cholecystectomy. She was found to have anomalous heart sounds. This had aroused doubt in the surgeon's mind about the wisdom of operating. The news of Mackenzie's visit had spread. A crowd of staff and students gathered in the ward. He talked to her about her home. It was on the top floor of a house in the Lawn Market. Did she shop for her family of six? Of course, who else? And carry it up the stairs? Indeed, yes. And how many times a day did she climb those stairs? Countless times. And did she find them trying? Why should she. Mackenzie turned to the surgeon and told him to operate with confidence so far as the function of the heart was concerned.'[82]

This anecdote would reinforce the important medical maxim : 'Listen to the patient: they are giving you the diagnosis'.

As well as having a role in the education of current and future doctors, anecdotes help in the induction of doctors into the etiquette of the profession. Hospital residents, for instance, will seek advice from their predecessor on the preferred procedures in a new ward. Advice is frequently given in the form of an anecdote: 'Make sure you call the registrar the first time you do a lumbar puncture. I didn't and he tore strips off me for not checking with him first.'

Such professionalising anecdotes are often of the warning type, 'make sure you do this in case...' or ' don't do that because...', but anecdotes can also provide a much needed support function. Medicine is not very good as a profession at providing formal support for practitioners when they have made mistakes or misjudgements. Case conferences and ward or practice meetings may provide this help often in the form of a supportive anecdote. A junior partner in our practice was upset at having missed a case of tuberculosis in a young slim patient with a cough. The senior partner responded: 'It is easily done. I did the same thing with a woman whom I thought was anorexic and then she suddenly coughed up blood and had to be rushed into hospital!' 'We've all done it' is an expression frequently heard when doctors admit their mistakes to their colleagues and what follows is an account of the other doctor's mistake and reassurance that it can happen to us all. These supportive accounts do not just amount to crying on one another's shoulders, they usually lead to a shared learning experience. In the case of the TB misdiagnosis, the partners agreed to 'think TB' when dealing with persistent chest problems.

All the above functions of the anecdote occur through oral doctor-doctor communication. The written anecdote in the form of a single case report or 'A memorable patient' section as in the BMJ may serve an important function in stimulating investigation leading to new knowledge. Single case reports in the journals are often about puzzling cases which do not quite fit the prevailing scientific knowledge and it is such anomalies which serve to stimulate further research and discovery in medicine, particularly when doctors

working in the same field find that they are picking up similar anomalies and a series of cases start to emerge. One famous example cited by Dr Montgomery Hunter was the outbreak of phocomelia subsequently found to be associated with the antiemetic, thalidomide, when used in pregnancy. A more recent example is the concern over the possible dangers of silicone breast implants which have been raised by numerous anecdotal reports[83]. The anecdotes are not a substitute for systematic scientific research but they can point the research in the right direction in the first place.

We can see, therefore that doctor-doctor anecdotes can have a number of important functions. They draw attention to new medical treatments and diagnoses, they help hone medical knowledge and judgement, they have an important function in the education of current and future doctors and they assist the process of induction into the ways of the profession, and finally, they may help to point research in a fruitful direction. They, therefore, have an important bearing on evidence, and are factors in judgement.

2.5.3 Patient-doctor anecdotes

In the general practice setting in particular, the patient's account of their problem is undifferentiated and unmedicalised because they have not yet had their story reinterpreted by a doctor. For instance, angina is not yet 'A tight pain in my chest which I get with exertion'; it is still described in this way:

> 'The reason I am here, doctor, is that last week I was walking to the shops with my wife and we came back with a lot of shopping and

had to climb up the hill to the house because the bus broke down. As we reached the top of the hill I suddenly got this pain in my chest which made me stop and gasp for breath.'

So anecdotes are often the way in which patients will explain their visit to the doctor in the first place.

Anecdotes are also used by patients to illustrate how the particular symptoms are affecting their lives at that time. This is a recent exchange I had with a patient who is particularly keen on the game of bowls:

RJM: How are the knees just now? Are the new painkillers working better?

MM: Oh no, its just as bad doctor, and with me Lady President of the bowling green this season too.

RJM: How are you getting on with the bowling?

MM: Oh, I'm not able to play just now. The last time I had a match I tried to deliver a bowl and I couldn't get up again! Some of the men had to lift me up off the green. It gave everyone a good laugh but I haven't been able to play since.

This kind of patient anecdote is important because it reflects the individual's experience of the problem and gives the doctor a clear idea of how function is affected. For MM, mild osteoarthritis of the knees was having a major impact on her lifestyle and merited physiotherapy and an orthopoedic surgeon's opinion. For another elderly woman, whose lifestyle was not so active, the condition might not have prompted any action. The anecdote reminds us that what the patient is interested in is their ability to function, not the severity or otherwise of

the pathology. Doctors will often say reassuringly to their patients 'You'll be glad to hear that the test result is normal', only to be greeted with, 'So why am I having these problems.' Patients want to be restored to normal function or at least to have an explanation for why they cannot function normally.

Patients' illustrative anecdotes can also be revealing of their understanding or misunderstanding of a suspected illness. A patient who had a urostomy scar that had developed a herniation told me:

> 'But my Uncle James had his hernias operated on down here [indicating her groin area]. I thought it was only men that had hernias. Mind you my sister has one up here inside [indicating the epigastric area] and she has problems eating with it.'

This series of anecdotes reveals the patient's (reasonable) confusion over the idea of a hernia and how it can exist in several different places. Paying attention to patient anecdote allows doctors the chance to clarify areas of misunderstanding and become aware of how the patient perceives their illness and their own ability to do something about it.

Even the way the way in which a patient orders events in her story can be highly significant. Compare two presentations of breast cancer:

> 'About a month ago I fell against the banisters and it was just after that that I felt the lump' ;
>
> 'I don't usually examine myself but about a month ago I fell and hurt my chest and when I was rubbing on a pain reliever I felt the lump'.

The first patient clearly feels that there is some connection between her injury and the development of the cancer whereas the second sees the injury as fortuitous as it allowed her the opportunity of discovering the lump earlier. If the doctor ignores these narrative devices the patient can be left confused and disorientated with many questions left unanswered. Alertness to the patient's story allows the doctor access to a deeper understanding of the patient beyond the purely scientific and pathological[84], and for that reason it is every bit as relevant to diagnosis and treatment as scientific evidence.

2.5.4 Patient-patient anecdotes

As we have seen above, anecdote is often the way in which patients will relay to doctors the impact of their symptoms on their lives. But it is not just in the doctor's surgery where anecdotes are the means of lay communication on medical matters. Patients will share their own and their relatives' experience of illness and medical treatment through anecdote in the home, at work and in the pub. These stories, it has been suggested by sociologists, may be one of the major means by which people decide whether or not they should visit the doctor with their problem.

A visit to the GP, or even more to the hospital clinic, is an important event which in its turn will be conveyed by anecdote to family and friends. This is an important point for doctors to remember as it is at this stage that the understanding which the doctor thinks he or she has shared with the patient about their problem and its solution may go awry. The story of the visit is told and the listeners will comment on it,

drawing upon their own experience and knowledge which is in turn often informed by anecdote. The scene might go something like this:

Patient : The doctor told me I had high blood pressure and I've to start taking these tablets.

Relative : Are you sure? I know Mr MacDonald down the road has got high blood pressure but he is twice the size of you and smokes like a chimney. He told me he had been getting terrible headaches and his doctor told him it was his blood pressure and he had to start cutting down on his smoking. Perhaps you should just try cutting down a bit too.

Patient : Yes. I don't feel unwell at all. I'll wait and see.

This kind of situation may contribute to compliance problems with some treatments.

Doctors must, therefore, be aware of the anecdote-sharing that goes on at home and in other contexts of patients' lives. Doctors need to be clear of what prompted them to consult by asking patients for, and listening to, their account, and doctors then need to check on patients' understanding and compliance with any agreed treatment on subsequent visits.

2.5.5 Anecdotes as therapy

Allowing patients the chance to tell their story to its end can be an important part of the therapeutic process. This gives them the opportunity to order and clarify the experience of the illness in their own minds and helps towards understanding it. It is surprising how difficult it is to listen properly to a patient's story to its conclusion. But

it is important to do so because if the doctor interrupts his comments are often completely ignored by the patient who wishes to finish his own narrative. As Peter Hoeg's heroine comments in his book 'Miss Smilla's Feeling For Snow'

> 'Very few people know how to listen. Their haste pulls them out of the conversation, or they try internally to improve the situation, or they're preparing what their next speech will be when you shut up and it's their turn to take the stage.'[85]

In summary, knowledge obtained through scientific endeavour in medicine is being vaunted as superior to knowledge obtained in other ways. However, learning from stories and anecdotes and being alert to their use by patients are essential to good medicine. This kind of knowledge enables us to deal with patients as an individuals and to respect their uniqueness as persons. As George Eliot in her novel 'Middlemarch' said of Dr Lydgate:

> 'He cared not only for "cases", but for John and Elizabeth, especially Elizabeth.' [86]

2.6 INTERPRETATION

As we have seen, the diagnosis or prognosis relating to a specific patient derives from :

(a) evidence, properly so-called but based on the 'detective' model;

(b) information deriving from the patient's own stories or anecdotes.

Likewise, the doctor's recommended treatment derives from:

(a) evidence-based scientific research;

(b) anecdotes from other doctors in similar situations.

All this, however, must pass through the filter of the doctor's own judgement. In other words, it must be interpreted. But what is interpretation? I wish in this section to consider what interpretation is, and how it contributes to clinical insight and judgement. I shall draw on some of the ideas found in hermeneutics.

2.6.1 What is interpretation?

One of our commonest uses of the word is related to the expression 'How do *you* interpret what he said, wrote, did?' Here, the speaker is asking for the meaning that you (the observer) ascribe to what was said, written or done. Inherent in the question is the implication that your interpretation might be different from mine or from anyone else's. The reason it is different is that your point of view or perspective on the subject might be different from mine or that of other people. An example might be if you are holidaying on a beach and see someone waving from the sea, you may well wave back, because your perspective on the situation is that everyone is on holiday and is behaving in a relaxed and friendly way. The life-guard who is

scanning the sea for problems has a different point on view and may interpret the wave not as a friendly gesture but as a cry for help and rush in to rescue the bather. Gesture, then, is open to interpretation in different ways and that interpretation depends on the point of view of the observer, either in a literal sense - according to the position of the observer - or in a psychological sense - according to the feelings the observer has with regard to the situation.

This notion of point of view or perspective was introduced by one of the early writers in hermeneutics, Johann Martin Chladenius, in relation to historical method[87]. He introduces the notion in this way:

> 'We shall designate the term viewpoint to refer to those conditions governed by our mind, body and entire person which make or cause us to conceive of something in one way and not in another. Because the positioning of our eyes - and especially their distance from the object perceived - causes us to receive one particular image and not another, there is consequently a reason why we should come to know something in one particular way and not another in all our perceptions; and this is determined by the viewpoint.'[88]

Chladenius takes a historical example to illustrate his point. He outlines the different descriptions that three spectators of a battle might make if they view the conflict from three different vantage points, one on a hill near the right flank, one on a rise near the left flank and the third, from behind the battle. The descriptions that each will give will be different, but all will be true according to the perception of the observer.

Certainly, all the observers may be truly reporting their perception but will they all be correct? It is important to ask this question here because in order for interpretation to contribute to the process of understanding in any subject area (and I am here thinking particularly of the medical context) it must be possible to separate correct, or at least plausible, interpretations from those that are incorrect, or implausible. We cannot just say 'it all depends on the point of view', or 'it's just a matter of what you think'. So, to return to Chladenius's example of the three observers of a battle, it is possible to say that one or more of the views of the battle that they report might be incorrect even though, to them, from their vantage points, their accounts seem accurate. For example, one of the observers might see a section of the opposing army move away from the battlefield and conclude that they were running away. What may in fact be happening is that the section is moving off in order to circle and advance again on a different flank. The report of that observer will, therefore, be entirely incorrect and, to his side, dangerous. The criminal justice system is based on the process of presenting two opposing interpretations of the evidence in a case to a jury and asking them to decide which is correct - the interpretation which indicates the innocence of the defendant or that which points to his guilt.

We therefore have examples from history and the law where it is possible to say whether the interpretation of something is correct or incorrect. In both these areas the correct account of events is there to be discovered because the events have already taken place; in other words, the correct interpretation of the events is *knowable,* even though

it is not, and may not be, known by those who are trying to find it out. Interpretation is necessary because, in history, information is incomplete and patchy or, as in the law, defendants cannot be assumed to be telling the truth about the events.

In the context of science, we might also say that interpretations of phenomena can be correct or incorrect. Scientific enquiries focus on things that are not yet known but are assumed to be knowable, and knowledge of them depends on there being an appropriate experiment to uncover this. In order to frame such experiments, scientists will put forward interpretations of the phenomenon. These interpretations (as we have seen in 1.2.1) are called hypotheses which will then, if possible, be subject to experiments to test their validity. The point, for the present argument, is that interpretations in this context may be correct or incorrect, but the answer is not known - and may never be known - by the interpreter. In order, then, for scientific interpretations to have some validity and for them to be taken seriously as possible explanations of phenomena, we depend on being able to say whether they are plausible or not. Nicolaus Copernicus, in postulating a Sun-centred system of astronomy in the 16th century, was not in a position to say whether his view was correct or not. He could say that this interpretation fitted the available facts better then the old Earth-centred idea and was therefore a more plausible interpretation.

So far, then, we can say that interpretations of things in some contexts or subject matters can be correct or incorrect, or that they can be more

or less plausible. There may be a further category in that it may be possible in other contexts or subject matters to have a number of different valid interpretations of something. To return to Chladenius's notion of point of view, is it possible to say that everyone's point of view on a subject might be correct or, at least, as valid as anyone else's? Chladenius takes a further historical example in his discussion:

> 'A rebellion is perceived one way by a loyal subject, a rebel perceives it another way , a foreigner or a person from court will perceive it still another way, and all of these perceptions will differ from a citizen or farmer, even if they know nothing about it other than that which seems plausible.'[89]

It is not possible to say here that any one of these interpretations of the uprising are correct. Each one is valid depending on the group which the individual espouses. An example that would apply to our modern world would be the situation in Northern Ireland. From the point of view of the Nationalist community, Britain is an occupying power and it is therefore valid to use armed force against an army of occupation, and those that do so are freedom fighters. To the Unionist community, Northern Ireland is part of the UK and the Nationalist activists are to be seen as terrorists and criminals. Either view could be seen as correct depending on the community to which you belong.

These examples would suggest that we can have situations where different interpretations of events or subjects can have equal *validity* and are not necessarily *correct* or *incorrect*. Politics gives many examples of this but literature and fine art may be the main areas where it is most commonly said that a number of different

interpretations of a work may be equally plausible. One of the reasons that the plays of Shakespeare continue to fascinate theatre directors is that they can be played in many different ways. For instance, *Othello* can be seen as a play about a jealous husband, or about the trusting gullibility of the simple soldier, or about racial hatred. *The Merchant of Venice* can be played as a light comedy or as a comedy verging on tragedy, if the role of Shylock is given prominence by the director. We cannot say that any one of these readings of the plays is the correct one. They are all plausible as long as the text will support them. We cannot even appeal to authorial intention to support the most plausible reading, as Shakespeare does not stamp his presence on the plays. Artists may or may not chose to allow their own views of a work to surface. This may be particularly so of highly abstract art where the artist paints something and leaves it to the viewer to make up his own mind about what the painting means.

This is not to say that anything goes in literature and art. Interpretations must be supported by a sensitive reading of the text which will involve understanding of nuances and analogies employed by the author. The poem *Felix Randal* by Gerard Manley Hopkins contains this verse:

> 'Sickness broke him. Impatient, he cursed at first, but mended
> Being anointed and all; though a heavenlier heart began some
> Months earlier, since I had our sweet reprieve and ransom
> Tendered to him. Ah well, God rest him all road ever he
> offended!'[90]

The poem can be seen as an account by Hopkins of this man Felix Randal whom Hopkins ministered to as a priest in his last illness. But the poet's use of the Lancashire dialect in this verse brings Felix's voice to our ears and the poem becomes a vivid picture of this big, burly farrier at first railing against his illness and then accepting it with Northern fatalism. If our ears were not attuned to this dialect or if the style change was not pointed out to us, we would lose much of what was intended in the poem and our reading of it would be incorrect.

In summary, interpretations of things can be correct or incorrect, more or less plausible; and it is possible to have a number of valid or plausible interpretations of the same thing. An individual's interpretation is guided by his own viewpoint. The correctness or plausibility of that interpretation will depend on how far that viewpoint is obscured by lack of knowledge or understanding of the subject.

Is it important to be aware of the status of an interpretation of something in terms of its correctness or plausibility when we come to consider the bearing of interpretation on understanding? Understanding something implies that some kind of conclusion has been reached about the subject; understanding is an arrival at a point when puzzlement about the subject has been removed. Understanding can, therefore, be reached by coming to a conclusion reached by the process of interpretation. In this context knowing whether, at the end of the day, an interpretation is correct or incorrect, or plausible or implausible may be important in relation to whether that

interpretation helps you to understand the subject better or not. In the play *The Merchant of Venice,* if our interpretation of the play is focused on Shylock as the main character, then the discomfort associated with his part in the play's action might lead us to see that play as tragedy rather than comedy. This would be to misunderstand the play because the play has an essentially comic structure which rules out a pervasive tragic interpretation. On the other hand, understanding may develop as a result of expounding and analysing the plausibility of various interpretations of a subject. In this context, even incorrect or implausible interpretations can contribute to our understanding of a subject. Returning to the above example, the process of interpreting the play through the eyes of Shylock helps us to understand certain themes in the play which are not apparent otherwise. This interpretation may not be correct in terms of understanding the play as a whole but it helps to elucidate certain aspects of it.

Interpretation is, therefore, related to understanding. But what exactly is the relationship? There is no one conceptually correct answer to this. We can say either that interpretation is a process which *leads to* understanding, or we can say that interpretation *just is* understanding in a context of puzzlement.

An example the idea of interpretation leading to understanding might be of the finding on an archeological dig of a piece of carved flint lying amongst other such implements and animal remains. The archaeologist can see that the piece of flint has a blunt end and a broad sharp end and its position implies that it might have been used in the

process of cutting up meat. He concludes that he has found a flint axe head. This conclusion has come about entirely by interpretation of the shape of the implement, the position it was found on the dig and by comparison with other such finds. The axe head is then taken to a museum and is put on view as 'flint axe head'. Does the viewer just understand that this is what the artefact is without going through any interpretative process? It may be that some interpretative activity is required by the viewer as well before he can conclude that this is an axe head. That activity might be almost subconscious but it is necessary for the viewer to compare this object with axes as he knows them before he can see that this object is plausible as an axe.

As an example of the second idea of the relationship between interpretation and understanding, consider the situation in which we are not sure of the import of what someone is saying. In such a situation we engage in a process of interpretation. To confirm our interpretation we might ask, 'Do I understand you correctly...?' In other words, interpretation just is understanding in the context of a certain sort of puzzlement. Indeed, another of the important originators of hermeneutics, Friedrich Schleiermacher, made no clear distinction between them and saw hermeneutics as the 'art of understanding'[91].

From the point of view of this thesis it is unimportant which line is taken. The important point is that interpretation is closely related to understanding, however that relationship is to be understood.

2.6.2 Interpretation and the clinic

My account of the nature and scope of interpretation should make it possible to understand the central role it has in the clinic. Whether we are thinking of the diagnosis, prognosis, or treatment, it is clear that the doctor's decisions must be based on his interpretation of the evidence, including the patient's own anecdotes, as it relates to the individual case. That interpretation either constitutes or leads to his understanding of the case. It is my contention that interpretations are not in themeselves in any sense evidence, but they are that without which evidence is blind and useless. It therefore follows that interpretation is a necessary component of clinical judgement. Before we can judge what the diagnosis is or the treatment ought to be we must have interpreted the signs, symptoms and anecdotes of the patient.

2.7 CONSENT

The doctor's best efforts at diagnosis and treatment may receive a conclusive block in the clinic if the patient refuses the recommended treatment. A patient is, therefore, fully entitled to refuse the best evidence-based medicine, and may accept (because of patient-patient anecdote) a second or third best treatment. It is, therefore, important to recognise that in the clinical setting the onward march of evidence-based medicine may be halted by the patient's refusal. Let us examine the meanings of the term 'consent'.

2.7.1 Consent as 'agreeing to'

The weakest sense of 'consent' is 'agreeing to' or 'accepting'. If we take an analogy from consent in political philosophy, then a ruler like Elizabeth I of England ruled by consent in that she was popular and the people accepted or agreed with her policies of war with the Spanish or persecution of the Catholics. But her *right* to act in this way did not depend on their agreement: if they had not agreed, then it would not have mattered. This is the weakest sense of consent. In medicine it might be illustrated in contexts in which the doctor says: 'I am proposing to do x and y' or, 'I have just done x or y. Is that okay?' And the patient says weakly, 'Yes, thank you doctor'. This strand of the consent doctrine does not confer rights on the patient.

2.7.2 Consent as 'authorising

A strong sense of consent is 'authorising'. A might authorise B to do x and y on his behalf. In this case B's right to do x and y necessarily depends on A's authorisation. B is delegated to do x and y and the main responsibility for the doing of x and y rests with A. For example, I might instruct or authorise my agent to bid for me in an auction. This is too strong a sense of consent to be assimilated into the main tradition in medical ethics. It has the serious disadvantage in medicine of undermining professional autonomy: the doctor may feel that what I authorise is futile, and in any case it is up to him to make the treatment decisions (although, as we shall see, the patient can legitimately refuse treatment).

It should be noted that the use of the term 'directive', as in 'advance directive', may encourage patients to see themselves as authorising the doctor to act as their agent. This has already happened in the USA. In a study of the literature Paris et. al.[92] note that doctors will almost always continue treatment if requested by patients or relatives, even if they regard it as futile. They do this because they believe that patient autonomy carries with it the right to whatever treatment the patient requests. Moreover, this view is supported by US ethicists. For example, Veatch and Spicer[93] maintain that a physician is obliged to supply requested treatment even if the request 'deviates intolerably' from established standards or is in terms of the doctor's judgement 'grossly inappropriate'.

In reply to the US position we must remember that the principle of respect for autonomy applies not only to the patient but to the doctor; and if, in the doctor's opinion, the requested treatment is 'grossly inappropriate' then the doctor has no duty to provide it; indeed he/she has a duty *not* to provide it. The position has in fact been supported in the UK by the Court of Appeal. In a case in which a physician had indicated that he would not concur with a family's request to give a dying patient ventilatory treatment if that became necessary to sustain the patient's life, Lord Justice Donaldson stated that

> 'courts should not require a medical practitioner ... to adopt a course of treatment which in the *bona fide* clinical judgement of the practitioner was contraindicated.'[94]

Lord Justice Balcome went further and wrote that he

> 'could conceive of no situation where it would be proper to order a doctor to treat a patient in a manner contrary to his or her clinical judgement.'[95]

In other words, the Court of Appeal is here supporting the professional autonomy of the doctor.

But whatever the *legal* situation in the UK there are three points to be made. Firstly, that the American writers of Paris et.al., dismiss the judgements of the Court of Appeal as expressing English social class interests - where lawyers support the doctors[96]. They predict that this will change. Secondly, it is in fact the case that many doctors, and many more nurses, believe that they are obliged to do what the patients and relatives request, especially at the end of life. Thirdly, the

Patient's Charter encourages this, what we may call 'consumer autonomy', approach to medicine.

Nevertheless, contrary to our US colleagues there is good reason for maintaining the asymmetry whereby the patient may legitimately refuse a treatment or authorise, as distinct from agree to, the positive giving of a treatment. The reason is that the doctor is the expert on the patient's *medical* good - hence only the doctor can authorise treatment. But the patient is the expert on his/her own *total* good. In the light of this knowledge of an overall or total good, the patient is entitled to refuse treatment which might well be in his/her narrower medical good.

2.7.3 Consent as 'shared decision-making'

A third sense of consent is 'shared decision-making'. Shared decision-making has two elements. Firstly, patient preferences and values are discussed by the doctor in the light of the doctor's treatment proposals or they could be mentioned in advance in a document. This type of discussion is necessary but not sufficient for what I am calling joint or shared decision-making. The second necessary condition is that this discussion results in the activating of a socially or often a legally sanctioned procedure. We can call this procedure the giving or refusing of permission.

These two conditions are together necessary and sufficient for this sense of consent. There are a number of important points to note about this form of consent. Firstly, permission is given by both patient and

doctor; each may permit the treatment or not. Secondly, 'permission' is a *normative* term. It is not like 'agreeing' or 'accepting' which are non-normative. I can accept a drink or agree to go to the cinema without any question of *rights*. But to give permission is to confer a right. Thus the patient gives or refuses the doctor a right to intervene, and the doctor gives the patient a right to have or not have the treatment in question. Thirdly, the norms in question must be socially and, in the end, legally, sanctioned or legitimised by public policy. In other words, the parties must know and agree about procedures, and society more generally must know and agree.

Shared decision-making seems the most satisfactory model for consent in the clinic. The patient can be protected against paternalistic decisions deriving from doctors' or relatives' views of their total good. They can be protected because they can refuse permission through socially and/or legally sanctioned procedures. On the other hand, the doctor's professional autonomy is also respected in that he too is giving permission through socially sanctioned procedures. Moreover, responsibility is shared. In the first strand of the consent doctrine - agreeing or accepting - the main responsibility remains with the doctor. In the second - authorising - the main responsibility remains with the authoriser. But in the third , the responsibility is shared by patient, doctor *and* by society, which has sanctioned the procedures through its public policy.

2.8 CONCLUSIONS

1) Clinical consultation and practice is not simply a matter of applying scientific evidence to individual patients.

2) Scientific evidence provides a broad base for practice but evidence must also be individualised on the detective model.

3) Anecdotes are also a useful source of information on diagnosis and treatment.

4) Evidence and anecdote must be interpreted, and it is through interpretation that the doctor can show insight into the particular case.

5) Treatment decisions should be shared.

CHAPTER 3

THE HUMANE DOCTOR

3.1 INTRODUCTION : Dr John Gregory

I have tried to show how the scientific evidence-base of medicine must be modified and balanced in clinical practice by a range of other factors. The topic for this chapter concerns the qualities, dispositions or nature which a doctor must have in order to manage a clinical consultation along the lines indicated in chapter 2.

An excellent pointer to these qualities is provided by Dr John Gregory in his lecture on 'The Duties and Qualifications of a Physician'. Gregory writes:

> 'In the possession of this subject, I shall, in the first place, consider, what kind of genius, understanding and temper naturally fit a man for being a physician. - In the second place, what are the moral qualities to be expected of him in the exercise of his profession, viz. the obligation to humanity, patience, attention, discretion, secrecy, and honour, which he lies under to his patients. - In the third place, I shall take notice of the decorums and attentions peculiarly incumbent on him as a physician and which tend most effectually to support the dignity of the profession; as likewise the general propriety of his manners, his behaviour to his patients, to his brethren, and to apothecaries. - In the fourth place, I shall particularly describe that course of education which is necessary for qualifying a physician to practice with success and reputation; and

> shall, at the same time, mention those ornamental qualifications expected from the physician as a gentleman of a liberal education, and without which it is difficult to support the honour and rank of the profession.'[97]

I shall deal with the education of the physician in chapter 5, and it may be permissible to divide Gregory's other points into two, which he himself refers to as 'the exertion of genius'and the 'exercise of humanity'[98] . Let us consider 'the exertion of genius'.

3.2 KNOWLEDGE AND SKILLS

Gregory gives a surprisingly up-to-date account of 'the exertion of genius', by which he means the knowledge-base or evidence-base of medicine. 'Perhaps no profession requires so comprehensive a mind as medicine'. Indeed, Gregory explicitly acknowledges the importance of basing medical knowledge on evidence. He writes:

> 'Among the infinite variety of facts and theories with which his [the physician's] memory has been filled in the course of a liberal education, it is his business to make a judicious separation between those founded in nature and experience, and those which owe their birth to ignorance, fraud, or the capricious systems of a heated and deluded imagination. He will likewise find it necessary to distinguish between important facts, and such as, though they may be founded in truth, are notwithstanding trivial or utterly useless to the main ends of his profession. Supposing all these difficulties surmounted, he will find it no easy matter to apply his knowledge to practice.'[99]

In this passage Gregory is asserting the importance of establishing a secure evidence-base (he distinguishes 'nature and experience' from 'ignorance and fraud'), of distinguishing 'important facts' from 'trivial' ones, and of being able to 'apply his [the physician's] knowledge to practice' (or in the clinic). In all this, Gregory is stating with admirable brevity the points I have laboured to express in chapters 1 and 2.

Before I go on (3.4) to consider Gregory's views on 'the exercise of humanity' I should like to examine an aspect of clinical practice which Gregory does not stress, perhaps because it would seem to him to be more characteristic of the lowlier occupation of the surgeon which he does not discuss. I refer to the exercise of skills.

The central role given to acquiring skills can be seen in the 'aims and objectives' of courses in medical faculties. They stress that the outcomes of such courses must be such that the student will be able to *do* various things rather than *know* various facts (see 5.8). Indeed, 'transferable skills' has become the catch-phrase of educational theory more generally. There are probably two reasons for this. One was the attempt during the Thatcher years to move education in a practical 'utilitarian' direction, and the second is the huge influence of Gilbert Ryle's *The Concept of Mind* in which Ryle attempts to argue that possessing knowledge is basically a matter of knowing how to do various things. I shall examine Ryle's arguments here[100].

I have been maintaining (chapter 1) that scientific understanding is a matter of acquiring systematic knowledge *that* certain facts are the case and are related in certain ways. In other words, my claim is that, when we speak of understanding why something is the case, how a trick is done, what a person is saying, and so on, what these senses of 'understand' have in common is that they are all related to the 'knowing that' family.

On the other hand, in *The Concept of Mind* , Ryle argues that the various senses of 'understand' belong to the 'knowing how' family. Ryle discusses that sense of understanding which is roughly equivalent to following what someone is saying or doing, and he argues that understanding , in this specific sense, is a 'part of knowing *how* ' because the 'knowledge that is required for understanding intelligent performances of a specific kind is some degree of competence in performances of that kind.' Now it may well be that Ryle does not intend to generalise from the specific sense he discusses to the concept as a whole, but there is certainly a temptation to do so since it is natural to assume that, if a concept has different senses, more or less systematic connections will hold among them[101] and a family connection with 'knowing how' ensures respectability.

Unfortunately, however, a close relationship with 'knowing how' is not easy to establish for the more general senses of understanding why, how and so on. Imagine the case of a person who inquires why salt is scattered on the pavement in icy weather and is told that salt lowers the temperature at which water will freeze. If the person then understands, it is plausible to claim that this is because he has been given information which enables him to connect the matter with his existing knowledge. It is true, of course, that he now knows how to account for the scattering of salt, but this is only to say that he is able to make use of what he has been told and believes to be the case. Similarly, if the conjuror explains where he put the penny that disappeared, we understand because, having been told, we know that the penny went up his sleeve. It may be argued that we also know

how to do the trick. But what does 'knowing how to' mean in this case? It cannot amount to being able to do the trick since a person does not necessarily acquire the ability to do sleight-of-hand just from being shown how to do the trick, and if 'knowing how to' involves no more than knowing how the trick is done, it is a knowing *that* which is involved.

Analysis of these general senses of 'understanding' seems to suggest, then, that the concept belongs to the knowing *that* family. Moreover, Ryle's specific sense can also be claimed as a relative. The ability to follow what a person is saying is indeed a skill acquired by imitation and practice. But this plausible piece of learning theory must not be allowed to displace the epistemological contention that the skill depends on a person's knowledge. Indeed, facility in the exercise of this basic skill varies directly in proportion to a person's knowledge. To follow (or conduct) a conversation about servicing a motor-car engine a person must have knowledge of engines and the more he knows of them the better he will follow. And this has general application to all communication. To use language with understanding it is necessary to possess concepts, and the possession of concepts, however it may govern our skills, is itself basically a function of our knowledge *that*. Similarly, our ability to understand what someone is doing when he plays trump depends on the extent to which we possess the relevant concepts, or, in other words, on our knowledge of the terms, rules and strategies of the game. Hence, it is at least arguable that Ryle's specific sense of 'understand' is akin to the

more general senses, since it too seems logically dependent on our knowledge *that*.

Of course, when we play a game, or understand language, we are not necessarily rehearsing facts in our head! Knowledge that or understanding is most often 'dispositional'. In the sense that we just display it 'without thinking'. But it is still a display of systematic knowledge. The same is true of many so-called 'skills' in medicine. What the medical student or junior doctor may need to rehearse in her head is done by the experienced without thought. But it is a display of underlying understanding.

There is however an element of 'know how' or skill which is not reducible to 'know that'. Tying a surgical knot, for example, or giving an injection to a baby, are a matter of what might be termed 'motor skills', and they are not reducible to 'knowledge that'. Even here, however, the question of when, how much, for how long, to exercise these motor skills must be governed by the doctor's systematic understanding of the patient's problem.

The 'genius' of the doctor then involves a scientific evidence-base of systematic 'knowledge that' which gives rise to skills and governs skills.

Obviously many of these skills are those of diagnosis, prognosis and medical and surgical treatment. But it is important to discuss a set of

skills which are much stressed as essential to the medical 'genius' - communication skills.

3.3 COMMUNICATION SKILLS

The importance of 'communication skills' is commonly thought, in medical literature at least, to be a discovery of the period 1960-90. It was alleged, with some justification, that doctors were deficient in such skills, and that it is of great importance for patient care that doctors should acquire 'communication skills'. Indeed, the medical stress on communication skills is part of a wider concern found in management studies, and politics. This emphasis has tended to eclipse the importance of *what* is being communicated. For example, apologists for an unprecedented defect of a Conservative Government in 1997 tended to say 'We just didn't get our message across!' - as if it were a failure in communication rather than in policy which led to the defeat. Nevertheless, communication skills are important in general, and specifically in the clinic.

3.3.1 Rhetoric

It is, however, a serious error to think that the importance of communication skills is a discovery of the period 1960-90. The importance of such skills was noted by Plato (*Gorgias*) and by Aristotle (*Rhetoric*), and by many other writers in the ancient world. The Greek and Roman writers called such skills 'rhetoric' and saw them as both dangerous and as having a vital place in the education of a public or professional occupation. The importance of rhetoric was again emphasised in the Scottish Enlightenment. For example, George Campbell in *The Philosophy of Rhetoric* argues as follows:

'In speaking there is always some end proposed, or some effects which the speaker intends to produce in the hearer. The word eloquence in its greatest latitude denotes, "That art or talent by which the discourse is adapted to its end".

All the ends of speaking are reducible to four; every speech being intended to enlighten the understanding, to please the imagination, to move the passions, or to influence the will.

Any one discourse admits only one of these ends as the principal. Nevertheless, in discoursing on a subject, many things may be introduced, which are more immediately and apparently directed to some of the other ends of speaking, and not to that which is the chief intent of the whole. But then these other and immediate ends are in effect but means, and must be rendered conducive to that which is the primary intention. Accordingly, the propriety or the impropriety of the introduction of such secondary ends, will always be transferred from their subserviency or want of subserviency to that end, which is, in respect of them, the ultimate. For example, a discourse addressed to the understanding, and calculated to illustrate or evince some point purely speculative, may borrow aid from the imagination, and admit metaphor and comparison, but not the bolder and more striking figures, as that called vision or fiction, prosopopoeia, and the like, which are not so much intended to elucidate a subject, as to excite admiration. Still less will it admit an address to the passions, which, as it never fails to disturb the operation of the intellectual faculty, must be regarded by every

intelligent hearer as foreign at least, if not insidious. It is obvious, that either of these, far from being subservient to the main design, would distract the attention from it.' [102]

The points which George Campbell is making in this passage are very apt for any discussion of communication skills. It is indeed a contestable issue as to whether the principal 'end' of the doctor's discourse in the consultation should be 'to enlighten the understanding' of the patient, or 'to influence the will'. And, of course, it might be a matter for ethical debate as to whether it is legitimate for the doctor 'to influence the will' by 'moving the passions'. For example, if the doctor is convinced of the dire nature of the disease and the fatal consequences of not taking the tablets is it legitimate to try to affect the will through passions such as fear? We need not here pause on difficult ethical cases, but simply note that in the anti-paternalist ethos of the present day it would be unacceptable in general for the doctor to concentrate entirely on influencing the will. Communication skills should in the main be directed at creating the enlightenment of the understanding, thus leaving space for the patient to make choices.

3.3.2 Communication as explaining

The term 'rhetoric' has bad associations in contemporary discourse. But the same kinds of point can be made via an analysis of explaining.

Since explaining is obviously an activity of the first importance there have naturally been many studies of its nature. These have usually

been from the point of view of a special subject matter, such as science or history. I propose to discuss the concept from a different point of view, as a means of human communication, or a kind of pedagogy. I shall argue for the strong thesis that the concept is seen in truer perspective from this point of view than from that of science or history. Let us begin by contrasting the points of view in more detail.

The advantage of approaching the concept of explanation from a special subject matter, particularly science, is that the concept is discussed in contexts in which explanatory problems are outstanding, but the danger is that the peculiarities of explanation in a special field are regarded as fundamental features of the concept in general. Thus, the prestige and explanatory triumphs of science have led to the widespread view that scientific explanations provide paradigm cases: we are encouraged to think that the true or correct explanation is always there waiting to be found. Yet it is not clear how the scientific paradigm applies either to our everyday activities of explaining our point of view, how to get from the airport to the hotel, the best way to prune roses. Or to the more technical matters of explaining the nature of sonata-form, the meaning of an obscure poem or play, or the nature of a certain theological concept. But such activities are reflected in the dictionary meanings of 'explain', such as 'to smooth out', 'to give details of' or 'to make plain or intelligible'. And I wish to argue that it is the activities reflected in the dictionary meanings which give us the root form of the concept, and that the scientific stress on '*the* correct explanation' involves a derivative use. To put my thesis in a different way, I shall argue that the concept of explanation is seen in truer

perspective as a *gerund* 'explaining', a process of getting something across to a person in a definite context, than as a *substantive* 'explanation', something which has an existence of its own independent of a specific person and context. Certainly, it is the activity of explaining which is relevant to the analysis of communication skills.

It is clear that a person will not ask for an explanation of something (granted he is not in the privileged position of a tutor) unless he is puzzled by it or in some way lacks understanding of it. But people may be puzzled in different ways and degrees about the same thing and the different background knowledge of questioners and the contexts of their requests will demand different answers. In different cases, moreover, a person may have more or less success in explaining his views. Explaining to the individual needs and interests of his hearers; an explanation for Jones may not be an explanation for Smith. Hence, if, when Jones has requested and been offered an explanation, he has still no grasp of the matter, we shall normally withdraw our claim to have explained the matter to him: we shall rather say that we have tried but failed to explain the matter to him. This suggests that there is a conceptual connection between explaining a matter to a person and making it plain and intelligible to him; so much, indeed, is suggested by the etymology of 'explain'.

If this brief analysis of the concept of explanation is on the right lines, explaining may be characterised as an activity aimed at producing the conceptually fitting response. 'Now it is plain to me, now I can

understand it.' (Of course, whether the person in fact understands it is another matter.) It is being suggested, that is, that explaining should be seen as a form of teaching, that form of teaching which is concerned with creating understanding rather than merely with imparting information. We may expect, therefore, that, like teaching, explanations will vary in style according to variations in many factors such as the knowledge, ability and interest of the listener. Where the 'pupils' are of a certain standard intelligence with standard interest, and there is an accepted body of knowledge on the subject, there may be a standard 'lesson' which has been found to satisfy. It is in such contexts that we tend to speak of 'the explanation'. But such explanations can exist ready-made only because at one time they have been designed to fit certain standard requirements. That is why made-to-measure explanations give the root form of the concept.

To have communications skills, then, is to have the capacity to make and to measure explanations to fit the needs of the patient. The fault of the doctor lacking such skills is the fault of someone who thinks that there is one correct explanation and that his job is simply to deliver it. But the doctor with such skills is like a skilled keyboard player creating variations on a simple bass line. The bass line is the ground of medical fact but the good doctor is able to make something of this in a way which, in the words of George Campbell, enlightens the understanding, pleases the imagination, moves the passions, and influences the will of the patient. The good or humane doctor is therefore like a creative artist in the exercise of communication skills.

3.4 THE HUMANE ATTITUDE : Dr John Gregory

I can now return to the second general headings under which Dr. John Gregory discusses the duties of the physician. He calls it 'the exercise of humanity'. Gregory writes:

> 'In the second place, medicine presents a no less extensive field for the exercise of humanity. A physician has numberless opportunities of giving that relief to distress, which is not to be purchased by the wealth of India. This, to a benevolent mind, must be one of the greatest pleasures. But besides the good which a physician has it often in his power to do, in consequence of skill in his profession, there are many occasions that call for his assistance as a man, as a man who feels for the misfortunes of his fellow-creatures. In this respect he has many opportunities of displaying patient, good-nature, generosity, compassion, and all the gentler virtues that do honour to human nature.' [103]

It is clear that by 'the exercise of humanity' Gregory means the exercise of moral virtues. He writes:

> 'I come now to mention the moral qualities peculiarly required in the character of a physician. The chief of these is humanity; that sensibility of heart which makes us feel for the distresses of our fellow-creatures, and which of consequence incites us in the most powerful manner to relieve them. Sympathy produces an anxious attention to a thousand little circumstances that may tend to relieve the patient; an attention which money can never purchase; hence the inexpressible comfort of having a friend for a physician.

> Sympathy naturally engages the affection and confidence of a patient, which in many cases is of the utmost consequence to his recover.' [104]

He goes on to note other qualities which should be possessed by the humane physician.

> 'There is a species of good-humour different from the sympathy I have been speaking of, which is likewise amiable in a physician. It consists in a certain gentleness and flexibility, which makes him suffer with patience, and even apparent cheerfulness, the many contradictions and disappointments he is subjected to in his practice. If he is rigid and too minute in his directions about regimen, he may be assured they will not be strictly followed; and if he is severe in his manners, the deviations from his rules will as certainly be concealed from him.' [105]

Three points are worth stressing in Gregory's account of the humane physician. First, the qualities he mentions are virtues or good dispositions. In the field of medical ethics there has been an explosion of what is called 'virtue theory'. The view is that 'ethics' requires doctors to have a range of virtues. It is clear however that Gregory was aware in the 18th century of the importance of virtues to the humane physician.

Secondly, the virtues mentioned by Gregory are not all 'moral' virtues in the narrow sense. He realised that there is more to the humane attitude than what would now be called 'ethics'. Thus, he mentions

'good-nature', 'gentleness', 'flexibility' and 'apparent cheerfulness'. Gregory is surely correct in this. There is more to the humane attitude than what is narrowly ethical. Thirdly, Gregory does also see the importance of a framework of ethical rules or principles (as they would now be called). In 2.7 I stressed the important rule that doctors must obtain informed consent for treatments. Gregory mentions others. He writes:

> 'A physician, by the nature of his profession, has many opportunities of knowing the private characters and concerns of the families in which he is employed. Besides what he may learn from his own observation, he is often admitted to the confidence of those, who perhaps think they owe their life to his care. He sees people in the most disadvantageous circumstances, very different from those in which the world views them; - oppressed with pain, sickness, and low spirits. In these humiliating situations, instead of wonted cheerfulness, evenness of temper, and vigour of mind, he meets with peevishness, impatience, and timidity. Hence it appears how much the characters of individuals, and the credit of families may sometimes depend on the discretion, secrecy, and honour of a physician. Secrecy is particularly requisite where women are concerned. Independent of the peculiar tenderness with which a woman's character should be treated, there are certain circumstances of health, which, though in no respect connected with her reputation, every woman, from the natural delicacy of her sex, is anxious to conceal; and, in some cases, the concealment of these circumstances may be of consequence to her health, her interest, and to her happiness.' [106]

Here he is concerned with the rule of keeping confidentiality which, of course, goes back to the Hippocratic Oath. He clearly distinguishes the deontological or imperatival nature of the rule from the more flexible display of the humane attitude. As he says:

> 'Independent of the peculiar tenderness with which a woman's character should be treated ..... there are certain circumstances of health .....every woman.....is anxious to conceal...' .

In sum, then, there is much to be said in favour of retaining Gregory's distinction between the 'genius' of the profession and its 'humanity'. Under the first heading we can place the scientific evidence base, the clinical and the communications skills I have claimed are essential to the good doctor, and under the second heading we can include moral and non-moral virtues plus the narrower sphere of ethical principles. The doctor who has both sets of qualities can adapt the evidence-base of medicine to the clinical situation.

3.5 MEDICAL AFFECTATION

There is a danger to which any doctor writing about the nature of medical practice may succumb, and that is offering an elevated account of it which is easy for outsiders to ridicule. Once again, Gregory is aware of the danger. He writes:

> 'Physicians, considered as a body of men, who live by medicine as a profession, have an interest separate and distinct from the honour of the science. In pursuit of this interest, some have acted with candour, with honour, with the ingenious and liberal manners of gentlemen. Conspicuous of their own worth, they disdained every artifice, and depended for success on their real merit. But such men are not the most numerous in any profession. Some impelled by necessity, some stimulated by vanity, and others anxious to conceal ignorance. have had recourse to various mean and unworthy acts to raise their importance among the ignorant, who are always the most numerous part of mankind. Some of these arts have been an affectation of mystery in all their writings and conversations relating to their profession; an affectation of knowledge, inscrutable to all, except the adepts in the science; an air of perfect confidence in their own skill and abilities; and a demeanour solemn, contemptuous, and highly expressive of self-sufficiency. These arts, however well they might succeed with the rest of mankind, could not escape the censure of the more judicious, nor elude the ridicule of men of wit and humour. The stage, in particular, has used freedom with the professors of the salutary art; but it is evident, that most of the satire is levelled against the

particular notions, or manners of individuals, and not against the science itself.'[107]

One manifestation of the 'affectation of mystery' which is currently apparent is the obsession with 'core values' which has gripped medical schools. The matter is sufficiently a threat to a truly humane attitude to be worth examining in some detail. The problem has arisen because doctors have recently been grappling with their changing role in society. To this end the first summit meeting of the profession since 1961[108] was held in November 1993 and its consultation document 'Core Values for the Medical Profession in the 21st Century'[109] was produced. This document is sufficiently important to merit considerable reflection and comment.

In addressing the issue of core values doctors have been responding to influences inside and outside the profession. Within the profession there has been evidence of low morale, dissatisfaction with work and fear of litigation. This has largely been brought about by political and social changes outside medicine. The idealism which still exists in the profession has been undermined by the introduction by the government of a market-place within the NHS. This has encouraged some doctors to see money as their main motivating force and has alienated others. In addition, after almost fifty years of 'free' health care patients' expectations have risen and high quality health care is now seen as a right[110] not as something to be accepted with gratitude.

The profession has responded to these forces recently in three main ways. Firstly, it has begun a radical rethink of the education of future doctors[111] and some hitherto fiercely conservative medical curricula are being swept aside in favour of a new structure incorporating problem-based learning theory and self-directed study[112]. (I shall discuss this in chapter 5.) Secondly, doctors have begun to look more carefully at what they actually do and at the evidence for doing it, and clinical audit and evidence-based medicine[113] are becoming the buzz ideas of the time. Thirdly, there has been an attempt to look more philosophically at what being a doctor means in today's society and at what the profession stands for. It was this third area that the summit was convened to address although any convincing answer to it would have to incorporate a consideration of issues one and two.

The main weakness in the document stems from the question that the conference set itself: 'What are the core *values* for the Medical Profession in the 21st century?'. This has encouraged the production of a list of good activities and attributes which might be associated with the practice of medicine but are not inherent to it or defining of it. A better question might have been 'What is the good doctor good at?'[114] thus rooting the question firmly in what a doctor does. An example of the vagueness attached to the document's broad central question is the list of 'basic and ancient virtues' which are given as 'commitment, caring, compassion, integrity, competence, spirit of enquiry, confidentiality, responsibility and advocacy'. These read like a list of good things which, we might hope, would be associated with any

upright citizen of the land, not just a member of the medical profession.

Indeed, there is another serious disadvantage attached to the document's moralistic use of terms such as 'virtues' and 'values'. These terms (largely used in logically incorrect ways) give the impression of an attempt to retain the high moral ground which, as we shall see, has been the basis for the damaging gap between doctors' and patients' expectations. The final list of eleven 'core values' suffers from the same fault as the 'ancient virtues'; it is non-specific and moralistic. Startlingly absent is any clear statement of exactly what a doctor's responsibility to his patients is. Any discussion of core values in medicine at the present time should surely start with the question of what this responsibility amounts to and what its boundaries are. The doctor cannot be all things to all men. The therapeutic relationship between doctor and patient involves responsibilities on both sides. The doctor cannot take the tablets or stop smoking for the patient and if the patient decides not to carry out the doctor's advice it may be because he does not value health as highly as other priorities in his life. Doctors must accept this.

Why does the profession so readily adopt the moral high ground, and why, indeed, is it encouraged in this by the public? The answer is partly ethical and partly historical. Ethically, regard for the profession and its members has arisen out of the need for patients to look up to those who have such power over them in the form of medical knowledge and skill and who also have their tacit approval to perform

intimate examinations in the exercise of this skill. Historically, this aura surrounding medicine has its origins in the rising status of medicine in the nineteenth century[115]. Moreover, it has recently strengthened because doctors are very successful self-publicists. Medicine , it seems, now has an answer to all of life's problems. If you are unhappy take prozac; if you are bereaved go to your GP because he's now trained in bereavement counselling; if you want a baby at the age of sixty there is even a doctor who will help you with that. It is now common practice for a GP to be summoned on an emergency visit to help with some family crisis which has suddenly blown up and will just as suddenly blow down. This image is not just to do with what doctors know and do as this is quickly superseded by new knowledge (it has been said that medical knowledge has a half-life of five years[116]). Clearly, patients require of their doctors that they treat illness but they now expect more. Doctors are seen as the responsible members of a community to whom people might go for marital advice, job references or for the signing of passport photographs. They are expected, therefore, to be honest and trustworthy. Great doctors attract great 'lay' honours; presidents of the main medical colleges usually collect knighthoods. Conversely, if a doctor behaves badly in his personal life the public can be very censorious[117]; 'bad' doctors are seen as in some way destabilising society and the public will come down very hard on them.

Do doctors want to perpetuate this situation? If so, it will mean an ever increasing extension of the role of medicine such that eventually it will become so diffuse as to be almost meaningless. The recent

controversy over night work in General Practice is an example of this stretching of the role of the doctor to breaking point[118]. In terms of medical education, the current hope is to reduce the number of different areas of study a student has to master. But if we are to contemplate an extended role for medicine there would need to be room, in effect, to squeeze in a social work course, not to mention the mastery of alternative medical therapies. It seems more realistic for doctors to stick to practising medicine. And to stress the importance of developing the idea of evidence-based medicine is quite compatible with simultaneously stressing that medicine should be practised in a humane and compassionate manner. Being humane and compassionate, indeed having the 'basic and ancient virtues', may govern the *manner* of medical practice, but the *content* must rest on the bedrock of evidence-based medicine.

Of course, the profession has only deduced from patients' demands that they might wish an extended role from their doctors. We have not really asked them what they think. The 'Core Values' summit missed a great opportunity by not consulting the public for their views. It may be that the document was designed to stimulate debate inside and outside the profession but with such a navel-gazing start this is extremely unlikely. In view of the fact that the stimulus for the debate came largely from the changing relationship between doctors and patients the latter should have been included at the defining stage. In addition, it seems incredible that nurses and other members of the health-care team were not invited to contribute. Nurses in particular

often have a clearer view of what it is that patients have found wanting in their doctors and their contribution is essential.

The sad truth is that while the medical profession still has a respected place in society, and many doctors wish to give it an extended role, medicine is not a panacea. Paradoxically, it is the respect which the profession enjoys, and the fanning of patients' expectations through the patients' charter, which is now leading to an erosion of its position. For medicine will not always work. Yes, medicine is magic when it comes to transplanting hearts, treating diabetes or even controlling blood pressure and reducing the risk of stroke. But when it comes to helping with the problems of daily living, doctors are no better than the next person and they have no greater expertise. Patients will come down hard on doctors when the magic is seen to fail, especially if patients are expected to defer to the purveyor of that magic as someone who represents trustworthiness, integrity and stability in their world. It is this gap between expectation and reality that the 'Core Values' document should have addressed. That it failed to do so is one of the reasons it has not succeeded in galvanising the profession.

If the profession continues to search within itself for definition it will fail. Certainly, the stimulus for debate on this issue has come partly from doctors who have held themselves up to be a kind of 'Everyman' doctor - a paragon of all the virtues, medical and personal. But just as important are the expectations of patients who have responded in the past to doctors' overweening self-publicity by expecting more and more perfect health care. It is time that doctors stepped down from

the pedestal and got together with patients and other health professionals to tell it the way it is: doctors can't please all of the people all of the time, and sometimes they will fail.

Finally, at the risk of lowering the high moral tone of the 'Core Values' document, it should be remembered that most doctors have (and ought to have) commitments to other things outside medicine like family[119] or even leisure activities. It should not be considered morally reprehensible if doctors as persons value these things as much, or even more, than their profession. Thus, while the ethical, and more generally the humane, aspects of medical practice are of the first importance, it is also important for doctors to keep a sense of proportion about themselves and their wider role in society. Other occupations, from plumbers to philosophers, have a role and they too have their own values and humanity.

I have so far analysed the humane judgement of the good doctor into several components. I have tried to show that the good doctor is involved in the process of interpretation and has ethical sensitivity, both of which involve different kinds of understanding. I must now turn to the final component of humane judgement, namely, insight.

3.6 THE INSIGHTFUL DOCTOR

I have used the term 'insight' as an umbrella term to cover some of the various non-evidence-based judgements of the doctor. In consolidating this account of the humane doctor - the one who has the qualities necessary to adapt the evidence-base of medicine to the particular patient - I shall analyse the idea of 'insight' and claim that the humane doctor makes insightful judgements. It will be part of the task of chapter 5 to consider how far the education of the doctor can cultivate the capacity for insightful judgements.

3.6.1 What is insight?

There are two main ways of looking at this concept. Firstly, an insight may be thought of as a perception which comes to someone suddenly - 'a flash of insight' - and leads to a deeper understanding of something. Secondly, insightfulness can be seen as a tendency in a person to be able to see under the surface of something to its deeper meaning. I wish to consider these two aspects of the concept in turn.

3.6.2 The flash of insight

Most of us will at some time have experienced this sudden flash of insight when a problem we have perhaps been thinking over for a while suddenly becomes clear. These sudden leaps in understanding are not usually the product of hard, concentrated puzzling over the subject; they often occur when we do not expect them, as Beveridge writes:

> 'These sudden, large progressions occur not uncommonly when one is not thinking of anything in particular, or even when one is mildly occupied with something different, and in these circumstances they are often startling.' [120]

Koestler calls these progressions the 'eureka process'[121] after the story of Archimedes with his crown in the bath. Beveridge also quotes from the descriptions of scientists whose ground-breaking discoveries have flashed upon them at unexpected moments. The theory of evolutionary change came to A.R. Wallace as he lay ill with fever in 1858 and was re-reading Malthus' *Principles of Population* . In this essay Malthus described the checks on human population increase and mentioned that these checks tended to eliminate the least fit. Wallace's mind started to ponder over a similar situation in the animal world:

> ' Vaguely thinking over the enormous and constant destruction this implied, it then occurred to me to ask the question, "Why do some die and some live?" and the answer was clearly that on the whole the best fitted live...Then it suddenly flashed upon me that this self-acting process would improve the race...the fittest would survive. Then at once I seemed to see the whole effect of this.' [122]

These examples suggest that this kind of insight is the product of a mind primed and prepared for understanding after a process of striving for an answer. The answer then comes in a sudden flash often at a time when the mind is focusing on something else and the flash is accompanied by a rush of emotional excitement at the discovery of new ideas. These accounts relate largely to the creative work of scientists discovering new truths about the world, but is this kind of

insight applicable to a more everyday situation such as the discoveries of a school pupil?

If we consider the elements of this kind of insight - the mind primed to receive understanding, the sudden flash, and the excitement associated with grasping new knowledge - they are all present in the case of the school pupil. It may not be the case that all new understanding comes about in this way but a schoolchild may experience this if - in the same way as the scientist - he has grappled with the problem of understanding something for a while. Unlike the scientist, the pupil's flash of insight is not a creative one in that the understanding it produces in him is not new understanding for others, just for him. The 'eureka process', therefore can be seen as a subset of this kind of insight in that it is creative and leads to new knowledge.

I will return to the question of how such sudden flashes of insight come about later (3.6.4) after discussing the second kind of insight we commonly experience, which I will call 'insightfulness'.

3.6.3 Insightfulness

By this I mean the tendency of a person to be able to perceive a deeper meaning under the surface of things. When we describe someone as 'insightful' we regard them as sensitive, perceptive and alert to the unexpressed emotions behind what someone says. The insightful person has highly tuned antennae for the unstated and is alert to nuances of meaning which others might miss. Those who experience the kinds of insights I have just discussed may well be insightful in this

sense, but not necessarily so. Most of us will at some time experience sudden clicks of understanding but not all of us will be perceptive in the way that brings instinctive knowledge of something or - more usually - someone. In the clinical situation, I would be insightful if I realised that the patient in front of me really wanted to talk about her concerns about her daughter's drug use rather than the back pain she has officially presented with.

Insight or insightfulness concerns the *process* of understanding and is not meant to suggest that what is understood is of a fundamental nature. Detectives can have insights about their cases and doctors can be insightful in their dealings with their patients, as in the above example. This does not mean that they come across fundamental truths about their cases or patients, just that they approach the evidence or person in front of them in a sensitive and perceptive way; and that they are alert for any clues, whether these come via their reason, senses or instinct. Insightfulness is one reservoir which supplies sound judgement.

3.6.4 How does insight come about?

In this section I wish to look at two similar theories of how insights come about. Firstly, I will look at the Gestalt theory of thought and secondly, describe Arthur Koestler's work on 'bisociative' processes.

(a) The Gestalt theory of thought

This theory was developed in the early part of this century in opposition to the atomistic theory of perception developed by the

British empiricists. Their contention was that thoughts could be separated out into their constitutive parts (atoms) and coexist with other thoughts without being changed by them. According to Gestalt theory[123] thinking is a unitary process, not divisible into constituent parts, and each thought process is unique because of the particular circumstances involved. A thought starts with a stimulation from a particular situation and certain stresses are set up because of this perception which leads to a re-ordering of the initial perception. This is known as 'seeing the problem' or 'formulating the problem', and from this thought process the solution appears. The idea is of a seamless process whereby the stresses inherent to the problem are seen as bringing about its resolution.

An example of this process is given by both Kohler and Koffka[124] in the form of a detour experiment. A little girl of just over one year, and just able to walk unaided, is set within a low sided blind alley. An attractive object is placed on the other side of the partition so that she can see it but not reach it. She pushes against the partition in an attempt to get at the object but fails. She then looks around at the alley and begins to laugh with joy as she runs out of it, round the corner of the partition to get the object. In terms of Gestalt theory, the little girl's initial perception of the alley is as a problem preventing her from reaching what she wants. As she considers the problem it is suddenly seen in a new light : as the passageway leading to the object and the solution to the problem.

The sudden realisation was described by Kohler as 'insight'. In Gestalt theory this meant the process of change in the perceptual structure of something because it is perceived in the light of something else. In this case, the blind alley, when perceived in relation to the desired object, becomes a passageway to the object. Humphrey clarifies the Gestalt position on insight in this way:

> ' It is not, according to the contemporary Gestalt theory, that insight effects the reorganisation of the problem-as-seen. It is, rather, that the reorganisation is effected under stress of the contradictions, opposing features, intrinsic in the problem, and that Insight is the name given to the characteristic experience.' [125]

Thus, insight is seen as the process of understanding something by reorganising your perception of it : often by seeing it in a different light.

(b) Bisociation

Arthur Koestler would describe the above thought process as 'bisociative' [126] and distinguishes it from the more mundane 'associative' process. 'Associative' thought processes are, simply, the processes by which one idea leads to another. Such processes are habitual, mechanical and repetitive and do not demand concentration in the thinker. The thoughts by association with each other are not changed but remain as they are. No new thoughts are created and the patterns can be used again and again. Examples of such thinking might be that required to drive a car or ride a bike . Humphrey quotes Adamson's description of associative thinking where he draws parallels with the theory of atomism :

> 'Carried to its full extent, this conception might fairly be called that of physical atomism ; for on the whole in its two fundamental features it presents a strong resemblance to the physical doctrine of atoms : in the first place the elements are simple and retain their original character; and in the second place the combination which occurs among them is represented as being of the general nature called mechanical.' [127]

'Bisociative' thinking, by contrast, is creative and changes the thoughts involved into a new thought because of their dual association. Koestler describes Bisociation as a

> 'term referring to any mental occurrence simultaneously associated with two habitually incompatible contexts.'[128]

He goes on to clarify this by pointing out that bisociation is not the same thing as double meaning, as double meaning occurs when the two meanings exist side by side in the some context. In bisociation, the words or thoughts coexist in their separate contexts at the same time. It might be difficult to imagine giving our attention to two independent subjects or two separate contexts at the same time but Koestler says that this comes about by thought 'oscillating' the bisociated concept between its two contexts. In this way the concept is consciously present in both contexts at the same time.

It appears obvious that once the bisociative process has occurred and two previously independent concepts are linked they then cease to be independent. A revolutionary discovery is only revolutionary once; a joke is only effective the first time it is told. Such thoughts will,

therefore, become associative as the separateness of the original thoughts begins to wear away and the connection becomes obliterated into a single smooth process.

One of the most important aspects of Koestler's description of this process is that he relates it both to scientific discovery and to the way in which works of art and humour are perceived by us[129]. He takes the example of puns to illustrate bisociation at work :

> ' One of the courtiers of Louis XV, well known for his wit, boasted that he could make a pun on any subject. "Then make one on me," said Louis. "The king is not a subject, Sire," replied the courtier.'

And again, taking some examples from Freud,

> ' Two Jews met in a bathing establishment. "Have you taken a bath?" asked one. "Why?" replied the other. "Is one missing?" '[130]

The first example illustrates well the idea of thought 'oscillating' between the two different contexts. We have to hold both 'subject', as the subject of a joke, and 'subject' as the subject of a monarch, in our mind at once to appreciate the pun.

Koestler also points out that the process of metaphor in poetry or prose also involves bisociation[131]. The first lines of Shakespeare's Sonnet 33 illustrate this:

> 'Full many a golden morning I have seen
> Flatter the mountain tops with sovereign eye' [132]

The idea of flattery is not usually applied to sunshine touching the mountain tops and making then glow and so we are brought up short by the bisociation of flattery as obsequiousness and flattery as sunlight.

The metaphor is fundamental to the whole poem as the 'golden morning' is compared to a lover who flatters the poet with her presence. Just as the flattering morning can withdraw its sunny touch and bestow dark clouds, so the lover can withdraw from the poet leaving him in darkness.

In a chapter entitled 'The Eureka Process' [133] Koestler attempts to draw parallels between the 'wit' of puns and witticisms and the 'wit' of creative ingenuity, as in scientific discovery. He says that the main part of our enjoyment of puns is of intellectual satisfaction - that we are clever enough to appreciate the bisociative process and perform it in our own minds. If we return to some of the examples of scientific discovery through insights that I referred to earlier in this section - Archimedes and the crown and Wallace and natural selection - these occurred in minds primed with an intellectual stress - a desire to discover the truth about what they were studying. It is under this stress that the bisociation occurs, or, in terms of Gestalt psychology, that the process of insight occurs, and brings about a solution to the problem and, thus, intellectual satisfaction. In Archimedes' case the bisociation or insight connected the displacement of water in his bath by the volume of his own body with the problem of measuring the volume of the crown. In the case of Wallace, the bisociative or insightful flash occurred when his mind wandered onto an essay which he had read years before and which suddenly connected with the problem he was trying to work out.

According to these two approaches to the way in which insights come about there is a conjunction between two hitherto unconnected concepts or thoughts. This may occur in situations of intellectual stress, where the person has been thinking about the problem for a while (as in the case of the scientists), or when someone is faced with an immediate puzzle and requires creative thought to solve it (as in the case of the little girl in the blind alley). When the conjunction occurs, the thoughts or concepts change to become a single new one and a creative process has occurred. In the clinic, the doctor might be faced with the diagnostic puzzle of an elderly man who is just complaining of being a little tired. On further questioning, the doctor finds that his patient has recently lost weight and, on examining him, that he has the clinical sign of finger clubbing. These two apparently unconnected signs of weight loss and swollen fingers will combine in the doctor's mind and lead him to consider the diagnosis of lung cancer. The insight involved in this process of putting together apparently unassociated signs and symptoms in order to reach a possible diagnosis is a major part of the good doctor's task and requires both technical knowledge and skills as well as a humane and sensitive approach to what the patient is saying.

3.6.5 How does insight relate to understanding?

This seems a less obvious question to ask than 'How does explanation relate to understanding?'. As I have already discussed (3.3.2) explanation relates to understanding in that it *creates* understanding in the hearer. It does not seem correct to say that insight does the same thing although, as we have seen, insight can be seen as a process which

brings together two unconnected thoughts to create a new thought. Insight seems to have a closer connection with understanding in that we can say that insight *is* a kind of understanding. This then raises the question of what kind of understanding it is. Are all cases of insight re-describable as cases of understanding?

In answering this question it is helpful to recall the connection which exists between interpretation and understanding. I discussing that connection (2.6.1) I maintained that we can say either that interpretation *leads to* understanding or *just is* understanding in a context of puzzlement. The same is true of insight. Insight, or the bringing together of two apparently unconnected thoughts or perceptions, can be seen as leading to understanding or as constituting one mode of it.

3.7 HUMANE JUDGEMENT AND THE HUMANE ATTITUDE

I have suggested that the concepts of interpretation and insight lead to, or constitute, understanding. It is not that there are two conceptual layers here: there is one conceptual layer which is describable in different language in different contexts. It is this understanding which is the basis for humane judgement.

Ethical sensitivity is also involved in humane judgement, but in a different way. It *governs* judgement rather than constitutes its basis. But for simplicity, I shall regard all three as the components of humane judgement, which in turn is an expression of the attitude of the humane doctor (see diagrammatic summary p. vi).

It might be objected that I have too many conceptual layers here; that if I speak of humane judgement I do not also need to speak of a humane attitude. This objection can be answered by drawing the distinction between a disposition and episodes in which it is expressed. For example, someone may have a courageous disposition and this will be shown in courageous actions. In a similar way, I wish to maintain that the humane attitude is shown in humane judgement. There are not really two different things here, but one thing described in different contexts.

3.8 CONCLUSIONS

1) The good doctor has both 'genius' or scientific knowledge and skills and communication skills, and 'humanity'.

2) The doctor's 'humanity' is wider than what is usually considered 'ethical', although the latter is included.

3) It is important that doctors do not exaggerate the importance of their role in society.

4) 'Insight' or 'being insightful' are complex ideas which are none-the-less integral to the clinical situation.

5) Being insightful can be added to the ability to interpret, as forms of understanding.

6) If we add ethical sensitivity to the above we have the essential components of humane judgement, which is an expression of the humane attitude.

CHAPTER 4

THE PUBLIC DOMAIN

4.1 INTRODUCTION

I have so far concentrated on the complex ways in which the evidence base of medicine is modified in clinical practice. Thus patient anecdotes and patient consent or refusal of given treatments affect the options available in a clinical situation. Moreover, the doctor's scientific attitude is modified by his ability to interpret and to have insights about the individual patient. But, as distinct from clinical practice, there is another domain of medicine with its own distinctive evidence-base and its own need for judgements of a different sort - this is the domain of public health medicine, formerly called 'community medicine'.

The domain of public health medicine is an important one. Indeed, it is widely recognised that the huge improvements in the health and longevity of the Europeans and North Americans this century are much more due to improvements brought about by public health medicine than they are by clinical medicine. The contemporary emphasis on expensive, high-tech medicine has in fact affected the general health in only marginal ways. In discussing the evidence-base of public health medicine separately from that of clinical medicine, therefore, I am not to be taken as seeing it as an unimportant appendix to clinical medicine (although Government expenditure in the area seemed to endorse the 'unimportant appendix' point of view); rather I

am discussing it separately because of the different way in which the insights affect the evidence. I shall begin by considering the nature of public health medicine.

4.2 PUBLIC HEALTH MEDICINE AND ITS EVIDENCE-BASE

Let us begin by accepting the World Health Organisation (WHO) definition of the term 'public health'[134], used also in the UK in the Acheson report:

> 'Public health is the science and art of preventing disease, prolonging life and promoting health through organised efforts of society.'[135]

This definition suggests that evidence problems can arise in public health over preventing disease and promoting health. 'Prolonging life', if it is not achieved by preventing disease or promoting health, is a matter for clinical medicine and will not be discussed separately in this chapter. Issues may also arise over 'the organised efforts of society' and over what it means to say that public health is both a science and an art. I shall conduct my discussion, then, under these headings and try to encompass a representative selection of issues, including some with international implications.

But let us first examine the evidence-base of public health medicine. It will quickly emerge why policies based on that evidence rely more on insight and judgement than do judgements in clinical practice. In particular, moral and political considerations are of the first importance in shaping the evidence on which public health medicine is based.

Public health medicine is based on the science of epidemiology, which many public health specialists see as the ultimate triumph of evidence-

based medicine. But epidemiology is a difficult and uncertain discipline. It is thought to be justified in the public arena as a source of objective information for all those who have vested interests in outcomes and natural histories of diseases and their treatments. Yet the language of its science is neither easy to approach nor easy to understand, and its findings are couched often in terms which seem equivocal. Risks and benefits are qualified and couched in probabilistic terms. Nevertheless, these conclusions are to be used to define 'best practice', cost benefit algorithms, 'right action', informed consent or choice, political choice and action, community health decisions and even health advocacy programmes. The conclusions are drawn from numerical data, and gain their status from the status accorded to objective data.

Yet many of its practitioners are uneasy about the way that epidemiology is conceived, practised and used. In a mock indictment of the science, Shy has attempted to restate the mission of epidemiology:

> 'By essentially assuming that risk factors for disease in individuals can be summed to understand the causes of disease in populations, academic epidemiology has limited itself to a narrow biomedical perspective, thereby committing the biomedical fallacy of inferring that disease in populations can be understood by studying risk factors for disease in individuals. Epidemiology should be redefined as a study of the distribution and societal determinants of the health of populations. This definition provided a stronger link to the primary mission of public health and places an appropriate

emphasis on the social, economic, environmental and cultural determinants of population health.'[136]

Like all components of the health endeavour, epidemiology is inescapably moral in all its purposes. Because it intends to guide health care decisions at many levels, epidemiology shares the moral purpose of all health related activity. It seeks to determine what it is best for health care workers to do, where 'best' is in some way defined by societal values assigned to the primary good of health. By helping to determine 'best practice', epidemiology clearly asserts its vision of itself as one of the most important ways of bringing a computational dimension to the essential morality of public policy. Therein lies both its strength and its weakness, for it must, by its very nature, operate in an uneasy hinterland between the plains of objective evaluation and the poorly charted mountains of community values. This is the core of the problem to be examined in this chapter, the problem of assigning meaning to epidemiological studies.

I shall examine the various ways in which the evidence-base of the sub-divisions of public health medicine (as defined by the WHO) are affected by the insights, especially the moral and political insights, of those using epidemiological studies. To bring out this connection between epidemiology and ethical judgement, I shall quote at some length the opening section of the chapter by Calman and Downie in *The Oxford Textbook of Public Health* [137]. This brings out the complex way in which figures are inextricably bound up with the authors' ethical judgements. In other words, the allegedly neutral, objective

evidence of epidemiology can be meaningful if but only if it is part of a moral framework. The authors wrote as follows:

' Levels of health, measured in almost any way vary considerably from country to country. The collection of accurate statistics and their analysis is the responsibility of the WHO and other international organisations. They show the extent of the problems; for example:

16 million adults with HIV infection by the year 2000

8 million clinical cases of tuberculosis each year - a third of he world's population infected

300 million people with mental illness

2 million deaths from malaria, 270 - 450 million cases

300 million Hepatitis B cases

250 million cases of sexually transmitted diseases.

In the UK the infant mortality figures for 1991 were 7 per 1000 live births. In other countries figures in the same year of 140 to 160 deaths per 1000 live births were recorded. Life expectancy at birth varies for almost 80 in the richest to around 40 years in the poorest countries. These are huge variations and the economic cost of this burden of disease, ill health and disability, is considerable. In 1991 the USA spent 2800 dollars per person on medical care, compared with 2-40 dollars per capita in the poorest countries.

As developing countries progress, and health and lifespan improve, the problems of ageing populations become clearer. Changes in lifestyles which are occurring increase the chances of coronary heart disease, and increases in smoking increase the chances of

developing lung cancer and other smoking related diseases. Thus the health problems faced now by the developed countries are likely to be those of the future for the developing ones. The increasing urbanisation of the population can only increase the problems listed above unless there is a planned way of ensuring that effective public health policies are introduced. The rise in the elderly population is occurring worldwide.

Turning now more specially to Europe we find that over the last few years a considerable amount of data has been collected on health in Europe. The information used here comes from the Report by WHO Regional Office in 1994. The European Region ranges from Portugal to Russia, from Iceland to Turkey, and includes the countries of Central and Eastern Europe (CCEE) and the Newly Independent States (NIS) such as Kazakistan, Belarus and the Baltic States. The number of countries in the European Region of WHO has risen from 31 to 50 in the last few years.

Certain general factors are relevant. In 1992, no less than 8 countries were affected by war, with the consequences of conflict such as violent death, disruption of he infrastructure and migrations of several million people. In countries of eastern Europe in particular, there has been an economic recession which has had a major impact on health statistics. The migration of large numbers of the population has been associated with poverty, homelessness, and poor living conditions. Violence has always been obvious in

many countries. What have been the implications of these changes on the health of he people of Europe?

Life expectancy in the countries of the European Union continues to rise and is around 72 for males on average. This is in contrast to a number of countries in the NIS in which life expectancy has actually fallen. While this is a crude indicator of health it demonstrates how rapidly changes in social, economic and environmental circumstances can have an effect. Infant mortality in Europe ranges from 5 - 10 per 1000 live births in most Nordic and western European countries, to over 40 in come central Asian Republics. Generally the figures show an improvement, but in some CCEE and NIS countries there has been a slight increase. Maternal mortality is similarly distributed, and is again declining overall.

There are considerable variations in cardiovascular mortality across the Region. What is particularly disturbing is that between 1985 and 1992, while many countries showed a decline in mortality (the UK by 5 deaths per 100,000), others showed considerable increase. the lessons of prevention will need to be learned all over again in the CCEE and NIS. In a similar way, age standardised death rates from cancer in the 0 - 64 age group are decreasing the EU and Nordic countries but increasing in the CCEE and NIS. Higher smoking rates explain some of these figures.

Communicable diseases remain a major health problem. Polio, diphtheria and cholera all have seen a resurgence. Immunisation rates are generally high but in the NIS protection against, for example, diphtheria is inadequate. The health service infrastructure in some countries is such that it is difficult to implement vaccination programmes. Tuberculosis is increasing, partly due to migration of very large numbers of people. By August 1994, there has been a cumulative total of 116,000 cased of AIDS reported in the Region. Encouragingly, the annual incidence shows signs of slowing down thanks to the huge preventive efforts over the last 10 years.

Turning to women's health we find that maternal mortality in high where abortion remains the principal method of contraception. there is also concern about the cigarette smoking rates in women, and the mortality of women from lung cancer continues to rise. Finally in this snapshot of figures, the number of elderly people in the Region continues to rise and they are a particularly vulnerable group. Mental health problems are also a cause for concern.

The picture, therefore, is a mixture of good news and bad news, with substantial lessons to be learned. Many of these lessons are ethical, and it is to these that we now turn. The next section will give an account of the main principles and concepts in terms of which health care ethics is discussed, and will related some of the health data just introduced to these principles. '

This extensive quote is, of course, interesting in its own right, but for my purposes it brings out clearly that numerical evidence and judgement make up a 'seamless garment'. For example, the following are a few of the phrases in which fact and judgement are married: 'burden of disease', 'poverty, homelessness, and poor housing conditions', 'violence', 'the figures show an improvement', 'protection against diphtheria is inadequate', 'there is also concern that...', 'vulnerable group', 'a mixture of good news and bad news'. The authors are indeed explicit that many of the lessons are ethical. The point I wish to make, however, is not the obvious one that, granted the figures, we can make ethical judgements. My point is that the very selection and compilation of these figures, as distinct from other figures, indicated a prior ethical judgement. The decision to carry out epidemiological studies in certain areas and to compare the figures compiled with other areas of the world or with other historical periods is itself an ethical decision. The 'evidence' is there because the ethical insight has first been there.

Epidemiologists are sometimes blinded to the evaluative nature of their discipline by their use of the term 'health inequality'. Thus, many of the epidemiological studies behind the Calman and Downie extract would be regarded and taught as 'health inequalities', as if all of them were inequalities of sizes of mountain. In other words, epidemiological studies frequently blur the differences between equality or inequality on the one hand and equity or inequity on the other. Let us examine this distinction in the context of public health.

The distinction can best be described by looking at those factors which can influence health and health care. It is possible to divide inequalities into those which are unavoidable, and hence where questions of equity do not arise, and those which might be avoided and thus raise issues of equity. Let us look at some examples[138] . In discussing the examples we must always remember that what is 'unavoidable' at one point in history becomes 'avoidable' at another.

First, natural or biological variations such as age, sex, and race and genetic background could be considered as factors which cannot be changed and thus any inequalities related to them are unavoidable. For example, older men have a higher incidence of heart disease than younger men, a clear example of an inequality. But no one would consider this related to inequity, except to the extent that we have neglected risk factor reduction in the elderly[139] .

Secondly, lifestyle and behaviour, if freely chosen, can result in inequalities in health. As an example, cigarette smokers have a higher incidence of lung cancer than non-smokers. This is an inequality, but to the extent that it is created by choice, it is not inequitable. Indeed, selective uptake of health promotional initiatives, for example, by middle class groups, could even increase inequalities in health, but could not be considered as unfair, unless it could be established that health promotion is selectively targeted on these groups.

Thirdly, lifestyle and behaviour, if not freely chosen, and which results in poor health, is likely to be considered as avoidable by society and

thus unfair. A behaviour chosen through a lack of resources, housing conditions, overcrowding, dangerous working conditions, exposure to environmental hazards, or lack of adequate public health response, would be an example of this. Disabled people often suffer unfairness (inequity) which compounds their already unequal health.

Fourthly, inadequate access to health care or other public services might be inequitable if the cause were avoidable. For example, financial considerations which resulted in a failure to use transport might be one such factor. Another might be lack of access to information about services due to learning or language problems, or the information not being available. This lack, or inequity, could lead to inequalities of access because of the restriction of choice and opportunity.

In summary of this discussion of the principle of justice we can say that those examples bring out that equity is about fairness and justice and implies that everyone should have an opportunity to attain his or her full potential for health. Inequalities exist in health and health care. Some of these are unavoidable, and thus could not be considered unfair or inequitable. Others are avoidable. It is this latter group in which the inequalities are inequitable, to which further attention might be addressed.

But for the purposes of my argument, the point is that evidence and ethical judgement are intertwined in public health medicine, and the failure of epidemiologists to notice this can give rise to confusions of

policy. There is indeed an aspect of public health medicine which makes its ethical base of the first importance. Let us examine this by comparing public health medicine with clinical medicine from the ethical standpoint.

4.3 PUBLIC HEALTH ETHICS AND HEALTH CARE ETHICS

The clinician is typically in a one-to-one relationship with a patient who has requested an interview because of a felt problem. The clinical imperative is therefore that something must be done including the giving of advice. The public health specialist on the other hand does not have a specific patient with whom he is in a special relationship, and has received no request from a patient. It could be said that the public health specialist responds to a collective cry from individuals in a community when some medical problem occurs which affects a large number of people in a locality. One recent example is the outbreak of *Eschericia coli* 0157 in Wishaw in central Scotland. But here, again, there is no continuing relationship between the specialist and the affected group of individuals and therefore no opportunity for those individuals to express their views on the public health response. The public health specialist therefore is (a) making a judgement about what it is in people's interest to have, whether they have requested it or not, and (b) dealing with populations, groups or societies rather than individuals. The ethical consequence of these features are that public health generates problems concerned with issues such as paternalism and individual rights, which are broadly (i.e. non-party) political in their implications. It follows that for any specific intervention (legislation for clean water, a programme of immunisation, restriction on smoking in public places or whatever), the necessary precondition of implementation is that it will improve the health of the public - and this improvement must be objectively demonstrable[140]. According to this approach, effectiveness must be established by scientific means,

such that all rational and competent judges can agree on the facts[141]. The most common technique for establishing effectiveness of this kind is through the discipline of epidemiology, in which clear and certain conclusions may not always be obtainable, as we have already seen.

The conclusion, then, is that ethical judgements are of vital importance to public health medicine. Let us now move on to another aspect of the WHO definition of public health medicine and consider 'prevention'.

4.4 PREVENTION

There is sometimes confusion between *prevention*, which is the abolition or reduction in the incidence of the disease; *avoidance*, which is keeping clear of risk factors; and *protection*, which may limit the spread of disease, say by vaccination or immunisation. For example, public health policy may encourage the prevention of malaria by swamp-clearing programmes and thus aim at the elimination of the source of the disease; or travellers may avoid catching the disease by avoiding certain geographical areas; or they may be protected against it by being given tablets. All these practices are loosely called 'prevention'. Of course, the categories will sometimes overlap. For instance, immunisation or vaccination programmes, which are really protection programmes, may lead to a reduction in the incidence of a disease, or even to its elimination, as in the case of smallpox. But this overlap does not always occur. The compulsory wearing of seatbelts is often regarded as a preventive measure. But it does not prevent accidents; only good driving and safer roads and vehicles do that. It gives a measure of protection against accidents[142].

It might seem that there is no need to provide any ethical justification for prevention: it is self-evidently a good thing. While this may be true, the general public and governments do not always act as if it were so. From the point of view of government it seems that much more money goes in the direction of health care than of prevention, and from the point of view of the public there is often an attitude of scepticism towards many preventive measures, and even more

towards what is now called 'health promotion'. Prevention as a general policy therefore requires some justification. There is an economical justification, that prevention is usually cheaper than care; medical justification, that some diseases are probably not completely curable so their occurrence should be prevented; and an ethical justification, that prevention avoids the pain, misery and grief of disease. It is also possible to include the economic and medical justifications in a wide sense of 'ethical justification'. As we shall see, however, this general ethical justification of prevention does not always apply to specific areas of prevention, and even when it does there are those who argue that the benefits of prevention can be outweighed in some cases by the ethical costs. Let us look at some examples.

Take the fluoridation of local water supplies. From the 1930s it was noted that there was a correlation between levels of fluoride in the drinking water and levels of dental caries. This suggested a preventive policy of introducing fluoride where the level was low. There were objections, on the grounds of undesirable side-effects, such as Downs Syndrome and, more recently, cancer. But a Working Party in Britain[143] found no evidence for such claims, and other scientific groups have reached the same conclusion. The ethical objection remains, however, that adding fluoride to the water supply can count as compulsory medication, and as such it is a violation of individual rights as laid down in the UN Declaration of Human Rights. Rights, of course, are not inalienable and can be overridden when the survival of the public requires it. But it is doubtful if the prevention of dental

caries can count as a justification for ignoring rights. Note that there is really no solution to this dispute. One position or the other must be overruled[144].

The issue of vaccination for rubella raises rather different issues. The vaccine for rubella works by providing a benefit to the children of those to whom it is given. Now the vaccine can be given to girls only or to both girls and boys. If it is given to girls only there is little effect on the transmission or eradication of the disease. A 'girls only' policy is therefore a 'protection' rather than a 'prevention' measure. If on the other hand the vaccine is given to both girls and boys, and if the uptake is over 90 percent, we have a preventive measure which will eventually lead to the eradication of the disease. But if the second policy is followed and the uptake is low, say about 60 percent, then we have a situation which is harmful to the children of the unvaccinated young female population, for they will be much less likely to develop natural immunity. The ethical issues, then, are these. If we (the public) want the benefits of prevention then we must also put up with a degree of compulsion to ensure a high uptake. If compulsion is ethically or politically unacceptable then the best policy, to avoid harm, is to offer protection to those at risk. Again there is no ethically correct answer; a choice must be made[145].

4.4.1 Screening

Another public health activity which falls in general terms into the category of prevention is that of screening. Screening can be defined in

various ways, but a simple definition is provided by Stone and Stewart[146] :

> 'Screening is a preventive activity which seeks to identify an unsuspected disease or pre-disease condition for which an effective intervention is available'.

Screening is currently a fashionable medical activity. The demand for it is being encouraged by governments and by certain patients' organisations.

Politically it seems desirable because there is a belief that prevention saves money, and successive governments have therefore set up various screening programmes. A national screening programme for cervical cancer was set up in the UK in 1964, and a programme for breast cancer was established in 1988 for women aged 50-64 years. The establishment of such programmes has been enthusiastically supported by various women's groups. Indeed, such is the current demand for screening that Shickle and Chadwick[147] in a discussion of the ethics of screening ask whether 'screeningitis' is an incurable disease. If it were, no doubt there would be demand for a screening programme!

It is possible to screen for many conditions, but screening programmes must satisfy ethical criteria. First, they must satisfy the informed consent criterion for any sort of medical intervention. Second, since screening initiatives tend to be profession-driven rather than individual-driven, there is an additional responsibility for the professional to justify the intervention which may not have been

requested. Third, some screening procedures carry health risks, and all of then are likely to be accompanied by discomfort, anxiety, and inconvenience for symptomless individuals. Fourth, any screening programme carries with it the risks of the false positive or the false negative. Thus screening requires as much ethical justification as other medical interventions. Moreover, since screening programmes can be expensive in the aggregate, they require evaluation. Once again, therefore, the ethical principles of justice and utility must be used in the justification of screening programmes.

4.5 HEALTH PROMOTION

The Acheson Report definition of public health makes it clear that public health medicine must not only prevent disease but promote health. The literature of the new public health, and especially health promotion, tends nowadays to have a complex view of the concept of health and to distinguish various elements within it.

The first of those is often called 'negative health', or the absence of ill-health. Ill-health itself is a complex notion comprising disease, illness, handicap, injury and other related ideas. These overlapping concepts can be linked if they are seen on the model of abnormal, unwanted or incapacitating states of a biological system.

The second idea of 'positive health' has appeared more recently in published reports. The origins of this idea are in the definition of health to be found in the preamble to the Constitution of the WHO.

> 'Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity'[148].

It follows from this definition that 'well-being' is an important ingredient in positive health.

A third idea in the concept of health is that of 'fitness'. Fitness in its most obvious sense refers to the state of someone's heart and lungs. To be fit in this sense is to have a place on a scale ranging from being

able to climb stairs or run for a bus without getting out of breath to being able to run a marathon or climb Mount Everest. Fitness can also be used in a related but broader sense, which we might call the 'sociological' as opposed to the 'heart and lungs' sense. In the sociological sense of fitness a person is fit *for* some occupation or job. This means that people have the necessary health to enable them to perform the job or ask adequately without, for example, too many days off work.

The WHO definition refers to the 'mental and social' as well as to the physical. Nevertheless, the mental and social components of health are the poor relations of the health services and do not receive adequate attention. It is certainly true that mental health is most often taken to be the absence of mental ill-health. The idea of positive mental health or mental well-being is an obscure one, and perhaps it is ethically dangerous if it implies that eccentricity and single-mindedness are to be discouraged and the balanced and conformist personality encouraged.

The idea of 'social well-being' is in fact just as obscure as that of mental well-being, although at first sight it does not seem to be a difficult notion. What does it mean? In one sense 'social well-being' refers to the skills and other abilities which enable us to form friendships and relate to other people in conversation and through the many different sorts of contact which are part of ordinary social life. Sometimes these are called 'lifeskills', and the possession of them helps to create a sense of 'self-esteem' which is currently a fashionable concept in the

literature of health education. Clearly, like fitness, social well-being in this sense can be graded on a scale from negative to positive . It is a property of individuals and refers to their ability to cope in a social context - hence 'social well-being' is an appropriate term.

Can we link the absence of ill-health and the presence of well-being in a single concept of health in the manner of the WHO definition? This is not a rarefied question because it affects the legitimate scope of health education. If well-being is a component in the concept of health, then clearly health education has a much wider remit than it would otherwise have.

One important factor influencing this question is that ill-health and well-being cannot be related to each other as opposite poles on a linear scale. This approach has been tried by some theorists but it is not satisfactory, for it is logically possible (and not in fact uncommon) for someone to have poor physical health but a high state of well-being - as in the case of a terminal patient in a hospice who is supported by caring staff and loving friends - or a good state of physical health but poor well-being - as in the case of someone who has no diseases or illnesses but lacks friends, a job, interests.

The fact that health (the absence of ill-health) and well-being cannot be related on a linear scale must raise the question of whether they are in fact two components of a single concept. It can be argued that they are aspects of a single concept[149]. But it may be preferable and less confusing conceptually to think of them as two overlapping concepts

rather than as a single concept with two dimensions. Thus the feeling of well-being that a person has after an invigorating swim can fairly be described as a 'glow of health', but the well-being or satisfaction that a person has after writing a chapter in a book, listening to a piece of music, or just playing an enjoyable game is less obviously related to concepts of health, and more obviously related to concepts such as 'enjoyment' and 'happiness'. Again, the well-being that is created by moving someone to better housing is more obviously related to concepts of 'welfare' than to that of health. The conclusion is that, while the concepts of health and well being overlap, they are distinct and cannot be combined into one concept. The point is succinctly put by Kenneth Boyd:

'Disease is a medical category, while health is a moral category.'[150]

But whether we think of health as a single multi-faceted concept, or as a narrower concept which overlaps with related concepts such as well-being and fitness, we must still examine two charges sometimes levelled at health promotional activities - that they are unethical in that they are 'imperialistic', and 'commercialise' health.

4.5.1 Imperialism

Those making the charge of health imperialism might argue that what in health promotion terms is 'positive health' is really just a name for a range of states which are as easily or better seen in other ways. For example, 'well being' is just another name for happiness, and there are no professional skills which can reliably assist us to attain happiness. Again, the idea of 'fitness' might be said to be a technical one, relative

to specific ends, such as playing in the Premier League, but not one with an important bearing on health. The charge of health imperialism can be directed also at mental health. Mental illness may satisfy some of the criteria for illness (although even that has been disputed), but positive mental health might be said by critics to be a concept which attempts to annex the territory of the well-adjusted to that of the healthy. For example, mental illnesses, such as depressions or obsessions, are incapacitating in a manner similar to that of physical illness, but to stress positive mental health might be seen as simply making a value judgement in favour of the conventional or the well-balanced as opposed to the eccentric.

In reply to this sort of objection it is helpful to introduce the concept of health alliances. There are certain activities which are indisputably health promotion, but there are many others with which health promotion can form alliances. If health and health promotion can be seen in this logically and practically flexible way, then the charge of imperialism can be avoided.

4.5.2 Commercialism

The second ethical objection to health promotion is that it attempts to bypass autonomy and to sell health like a commodity. In this it might be said to resemble the advertisements for unhealthy products which it is opposing[151].

In reply to this argument we might question the premise that autonomy is something which everyone in fact possesses. People can

be victims of all sorts of social processes and be lacking in power. For example, as the advertising of tobacco and alcohol becomes progressively more difficult in some countries, so the manufacturers have turned their attention to the developing world, and the huge markets which are opening up. As the countries become more affluent, so the consumption of such products increase with consequential long term adverse health effects. Another example concerns breast milk substitutes. All health authorities are clear about the value of breast feeding for the mother and the baby. However considerable pressure was brought to bear on mothers in developing countries to use breast milk substitutes. Not only would this be more expensive, but the health benefits of breast feeding would be lost. International action was required to deal with this issue. The WHO resolved that states ensure that there be no free or subsidised substitute, which would affect breast feeding practice. This may seem to be merely a political compromise, but it may nevertheless be an effective way of implementing an ethically defensible position.

In view of the political and commercial power of the anti-health forces in society, health must be presented in as attractive a way as possible or health education will fail totally. If health educators confine themselves strictly to the rational, critical approach to education, then it is preferable to depict health education as an element within a larger health promotion movement concerned with health advocacy, legislative change, fiscal reform, and the mobilisation of community interests, as well as education narrowly conceived.

The tension between the ethical requirement to be person-respecting in methods and the practical necessity to be effective is addressed from an interesting point of view in the literature of self-help groups. The growth of self-care groups concerned with every conceivable malady and involving both the sufferers and their relatives has been a notable development during the last decade. These movements avoid the charge of paternalism commonly still made against every branch of health care, including health education. Apart from ethical considerations, self-care movements seem to be effective within their limits, although they may benefit from a professional health educator to advise and facilitate. Advising and facilitating is indeed an important role for health education.

4.6 ' THE ORGANISED EFFORTS OF SOCIETY '

Public health medicine, according to the Acheson Report definition, must obtain its results 'through the organised efforts of society'. How are we to interpret this, and what ethical issues arise from our interpretation? Is it just a metaphor to speak of 'society' bringing about health? One obvious answer to this question is that to speak of 'society' bringing about health is a roundabout way of referring to our elected political representatives. I shall therefore begin by looking at the role of the state in health care, concentrating on health legislation.

4.6.1 Legislation and prevention

First, a person's right to exercise autonomy may be legitimately curtailed by health legislation when he or she is suffering from certain sorts of infectious disease or mental illness such that the interests or health of others are liable to be harmed. There is no difficulty about the acceptance of this restriction in general terms. The problems arise over the more detailed application. For example, a topical question concerns the nature and extent of the restrictions which should be placed on sufferers from AIDS, or the extent of justifiable investigations or reporting of those who may be HIV-positive[152]. Again, it is controversial how far those who are mentally ill should be detained against their will, or what sort of treatment they should have if they are detained.

Pressure for legislation is generated as more become known about how diseases are transmitted. For example, the dangers of 'passive

smoking' are now appreciated, and other sorts of environmental pollution are now known to cause or exacerbate diseases such as asthma. There is therefore a case for curbing the freedom of both individuals and corporate bodies, such as industries, in the name of the autonomy of other individuals. This issue is, of course, a source of much political debate. Some countries have banned smoking in many public places, and various 'watch-dogs' keep a close eye on the consequences of the operation of the nuclear power industry. Although there can be political debate about applications of the 'preventing harm to others' idea, the general principle is clear and acceptable.

These problems become more acute when we consider the international dimension of health. In a developed country like the United Kingdom international aspects have several implications. The first relates to communicable disease, and with the ease of transport now the possibility of transmission to different populations becomes ever easier. Movement for business, leisure, or migration of populations is occurring on a scale as never before. The great plague, cholera and influenza epidemics of the past, and AIDS, tuberculosis and malaria in the present, show just how vulnerable the world is to such infections. The introduction of quarantine in Italy and France, in the 14th century, was one of the earliest attempts to control infections, and there is still ethical justification for certain sorts of boundary control for health reasons.

The need for international legislation is apparent also if we consider environmental issues, the most recent and serious of which was the

radioactive release in Chernobyl. But environmental problems regularly cross international boundaries as the effects of acid rain and global warming make clear. The need to ensure that there is an environmental impact assessment of economic growth has been set out in a series of programmes of 'sustainable development'.

4.6.2 Legislation and health promotion

Has the state any justification for using fiscal policy for passing legislation to promote positive health or well-being? A strong argument for maintaining that a government does have a duty to promote positive health can be found in the preamble to the Constitution of WHO[153], which asserts that there is a right to positive health. In ambitious terms it states:

> 'The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.'

If this is a fundamental right, then presumably there is a correlative duty laid upon governments to implement it. In other words, acceptance of the WHO Constitution commits states to health and welfare policies. How far such policies can be implemented no doubt turns on the wealth of the country, but there can be no doubt that wealthy Western nations are committed to implementing fiscal and legislative policies to enhance positive health.

To argue that there is a duty on governments to promote health for its own sake still leaves some questions unanswered. Supposing there is

such a duty, can it be implemented other than at the expense of individual autonomy?

It is easy to slip into the error of regarding all legislation on the model of the criminal law - as restrictive prohibition backed by sanction. But this is an oversimplified way of looking at some health legislation. For example, legislation may require public bodies to make provision for the disabled. This is more aptly seen as positive creation of new opportunities than as negative prohibition. There are legal requirements on factory owners to restrict unpleasant pollutants, and on car manufacturers to ensure certain safety standards. Indeed, there is an enormous range of health legislation with a positive slant. Whereas this may diminish the freedom of some groups in society, it certainly extends the freedom of the majority and improves their quality of life[154].

If we think of autonomy in this way, then health legislation is not *removing* our individual autonomy but rather *enhancing* it. In improving the general quality of life, legislation can add to our autonomy. This is obviously the case if we consider the example of provision for the disabled, but it is true also of anti-pollution legislation and many other types of health legislation.

4.6.3 Legislation and citizenship

So far in this section we have been concerned with the role of the state and health legislation. But there is much more to the 'organised efforts

of society' than legislation. Let us state the five principles which the WHO[155] sees as the basis of health promotion:

1. Health promotion involves the population as a whole in the context of their everyday life, rather than focusing on people at risk for specific diseases.
2. Health promotion is directed towards action on the causes or determinants of health.
3. Health promotion combines diverse, but complementary methods or approaches, including communication, education, legislation, fiscal measures, organisational change, community development and spontaneous local activities against health hazards.
4. Health promotion aims particularly at effective and concrete public participation.
5. While health promotion is basically an activity in the health and social fields, and not a medical service, health professionals - particularly in primary health care - have an important role in nurturing and enabling promotion.

How are we to interpret phrases such as 'concrete public participation'? What is the ethical importance of this approach?

One way of making sense of this idea is to think of society not in terms of the individuals who make it up, but in terms of the institutions, practices, customs, political arrangements, and social class relationships which give structure to the society. From this point of view, people are related to each other by the structures of their society,

and indeed part of their identity is created by these social structures. We could then evaluate a society in terms of the way in which its social structures tend to produce health in the people who belong to that society. Just as we sometimes praise the 'atmosphere' in a school or hospital as one of well-being, so the social structures of an entire society might be said to make for or detract from health or well-being.

Some theorists with firm attachments to individualism might prefer to interpret what I have said as referring to health determinants rather than health itself. For example, they might agree that a society with marked social class gradients and corresponding gradients in the distribution of ill-health is one with a tendency to create ill-health in individuals. Thus, in terms of this approach, if we speak of an 'unhealthy society' we are simply speaking metaphorically about the determinants, such as poor housing and diet and so on, that have helped to produce poor health states in individuals. Other thinkers might be prepared to extend language and to maintain that it is not a metaphor to characterise social relationships and structures as being themselves unhealthy. It is perhaps self-indulgent to pursue this theoretical question here, but it is certainly one way of making sense of the phrase 'the organised efforts of society', in the Acheson Report[156], or 'effective and concrete public participation', as the WHO principle puts it[157].

One context in which these phrases may have more practical meaning is that of rationing. There now seems to be a movement - famously initiated in the State of Oregon[158] - to involve the public in decisions

about rationing health care resources. One example of this is the use of 'citizens juries' in the Cambridge and Huntingdon Health Authority[159]. In a pilot scheme a group of local people were recruited and met for four days to consider how priorities for rationing health care should be set and how far the public should be involved in these decisions. The discussions were mainly on matters of process but the project indicated a willingness amongst the public to be involved in matters of priority setting.

To the extent that there is exclusive emphasis on the state delivery of health care to individuals, there is the invitation to see health as a commodity to be supplied by the state. The same is true if we think of health as a commodity bought by private health insurance. But health is not in any sense a commodity. Health and well-being are in the end a set of relationships among citizens and the involvement of citizens in decisions about rationing is a good example. As Beauchamp[160] wrote:

> 'Collective goods are ultimately a set of relationships among the citizens of a community, relationships in which the community as a whole participates to obtain desired benefits. These collective goods include aggregate states of welfare or well-being, including declining rates of disease and premature deaths; efforts to limit the resources society devotes to personal health services; shared and common access to a good like medical care to foster the sense of community and membership in the group itself. And finally,

there are those highly important collective goods, shared or common beliefs and values.'

It is clear that we can add a legal system to Beauchamp's list, and in particular one designed to stimulate social responsibility. Indeed, it is plausible to suggest that the increasing government intervention on drunk-driving issues has encouraged a greater social awareness about the dangers of alcohol more generally, and thus a greater sense of community and individual responsibility. In a similar way, legislation designed to assist disabled or handicapped persons can also increase a sense of community responsibility for those groups. In other words, in so far as health legislation and other governmental health policies are directed at increasing community awareness, as distinct from being directed at the good of specific individuals, it is not paternalistic.

A health alliance which has been shown to be helpful in developing community awareness is that between health promotion services and community arts. Several projects have taken place and have had favourable evaluations. For example, the Bristol Area Specialist Health Promotion Service report on these projects - photography, the visual arts and drama[161]. Again, Bromley by Bow have on-going community arts and health projects[162]. The central message from these and similar projects is that disease and ill health cannot be eradicated by narrowly medical means; they must be tackled in a community context with the approval of the community. In other words, medicine needs

health alliances, and the arts are a vital and ethically acceptable ally. The ancient Greeks recognised this when they made Apollo god of both medicine and the arts.

4.7 CONCLUSIONS

1) The evidence-base for public health medicine is epidemiology.

2) Judgement, especially ethical and political judgement, is essential not only for implementing policies based on epidemiology but also for deciding what studies are important to carry out.

3) Ethical judgement is equally integral in the prevention of disease, health promotion, and ensuring the organised efforts of society.

CHAPTER 5

THE LECTURE ROOM

5.1 INTRODUCTION

This thesis has so far attempted to describe the knowledge, skills and attributes required for someone to be regarded as a 'good doctor'. It is clear that the doctor needs to understand his patient through a scientific knowledge of how the body works and appreciate how scientific research can help him make decisions about how best to treat a patient. But I have also discussed the ways in which this evidence-base must be modified in the clinic; a 'humane' doctor is required with the understanding (the interpretative ability and insights) governed by ethical sensitivity, to apply, in the particular clinical situation, scientific evidence and skills. The good doctor needs both *techne* and *phronesis*. It follows that what makes a good doctor good cannot be reduced to a catalogue of knowledge and skills that can be learnt. The good doctor must also develop a sensitivity in his dealings with patients which is based on a knowledge of himself and his own values and imaginative insight into the problems and contexts of patients' lives. The good doctor must then be able to assimilate all this scientific knowledge of disease and treatments with the understanding of the individual patient and to exercise judgement as to what might be of benefit to this patient with this particular problem at this point in their lives. This chapter is concerned with whether, and how, this capacity for humane judgement or insight can be learned.

It is a lot to expect from the average student who emerges from medical school at the age of 22 or 23 to start working as a house officer. It is also a lot to expect from the university which has prepared them for this role. In fact, we might raise the question as to why medicine is a subject which is studied at university at all. Medicine can be seen as a very practical job and the knowledge and skills required to practise can be attained primarily by apprenticeship. In this sense the process of becoming a doctor might be regarded as like that of becoming a plumber or a car mechanic. There is a certain amount of factual information to be learned but most of the job is learned at the side of someone who is already skilled at it. However, in chapters 2-3, I suggested that there is more to the job of being a doctor than knowledge and skills. Is this extra dimension also to be acquired by apprenticeship, and if not, how can we make sense of the process of developing young people as doctors in educational terms?

In this chapter I will begin by discussing the distinction between education and training and putting forward a justification for why medicine should be taught at a university (5.2). I will pay particular attention to recent criticisms and developments in medical education. The major concerns of the General Medical Council (GMC), who are responsible for overseeing medical education in the UK, are the lack of educational content of medical courses, and the need for medical schools to address the process by which they might help students to acquire the skills and sensitivity in dealing with people which I discussed in chapter 3. It is easy enough to recognise these deficiencies, but it is more difficult to know how to address them

educationally. I will, therefore, go on to discuss whether morality, the personal attributes I discussed in chapter 3 (judgement, comprising ethical sensitivity, ability to interpret and insightfulness) and even communication 'skills', can be taught (5.3.1). I will also consider how medical students might develop some of the broader aspects of the humane attitude (5.5). I will end the chapter by describing two courses which have been made possible because of the GMC's new framework for undergraduate medical education and report on the outcome of one of them (5.6 - 5.9).

I have described the attitude which enables the good doctor to reach insightful judgements as a 'humane' attitude. Now, many writers on medical ethics would gloss this as an *ethically* sensitive attitude, and take the view that what the good doctor needs in addition to technical competence is a capacity for ethics. This is certainly important, and I shall say something about it (5.3.2). But, as I have already suggested in chapter 3, the concept of the humane doctor is wider than that of the ethical doctor. The humane doctor has an educational breadth, as well as an ethical sensitivity. I shall develop the idea of the educated doctor as an introduction to the broader idea of the humane doctor. It will emerge that the humane doctor who can exercise insightful judgement or *phronesis* is both broadly educated and ethically sensitive.

5.2 EDUCATION AND TRAINING

As an arts graduate entering medical school I was puzzled by the comments of some of my medical teachers (usually of the older generation) that I would be an 'educated doctor'. The implication of this was that medical degrees were in some way lacking educationally and that I was fortunate to have had a good educational experience before I came into medicine. These comments were disconcerting to an idealistic entrant to medical school, particularly when I had just experienced how high the demands for entrance to medicine were. How was it that medical schools were attracting the highest achievers in secondary schools but those who had gone through the experience of medical education did not regard themselves as educated?

Part of the answer to this question lies in the poor state of medical education in recent years and the disappointment many aspiring doctors felt at the experience they had had at university as intelligent young people. But there is another way in which this question can be answered. Doctors who consider themselves not 'educated' may still feel that they are competent practitioners and well able to do the job that their university studies prepared them to do. We may say, then, that they might consider themselves as 'trained' doctors. Let us now consider the distinction between these two concepts of education and training, since the distinction is the key to the idea of the humane. These distinctions are based on the writings of the philosopher of education, RS Peters[163] [164]

Both education and training may be regarded as processes through which an individual must pass in order to become educated or trained. However, we do not tend to speak of a particular end or subject matter when we refer to education, as in 'I was educated in art or physiology': this sounds strange to us. But when we talk of someone as being 'trained' the immediate questions are 'In what?', 'To do what?', or 'For what?'[165]. Training implies preparation for carrying out a particular task or to learn a specific skill. Medical students might be trained to take blood from patients or to examine the heart correctly. Such activities involve a narrow focus on the task and practice in order to develop the ability to carry it out. In contrast, we never speak of a person being 'educated' for a specific end. 'Education' is connected with 'educere' = 'to lead out' and implies a broadening and widening of the vision and the mind. The first distinction, then, between education and training is that training necessarily involves a narrowing of the focus to concentrate on learning a specific task or skill whereas education has to do with opening out, with releasing and liberating[166].

The second point which distinguishes education from training is that educational processes must have what Peters calls a wide 'cognitive perspective'[167]. Subjects such as science, literature and history are regarded as valuable educationally because knowledge of these subjects contributes to knowledge and understanding in many other areas. For example, we would be surprised to hear a scholar of Dickens speak only of the fact that Dickens' books are good stories without referring to the social comment and social history they contain. In the same way, the botanical process of apoptosis, which

describes the 'falling away' of leaves from the trees in autumn, has been used by medical scientists in cancer research to stimulate an understanding of a similar process in cells.

In other words, it is not a sufficient condition of being educated that someone has had a training in science or history. It is possible to be a scientist or a historian without seeing the connections with other disciplines or the wider world, although such scientists or historians may not be very effective. The ability to make connections and be excited by such connections between one discipline and another reflects a certain attitude of mind : an attitude that we would associate with the humanely educated person. This is Adam Smith's point (discussed in 1.6) to which I can now return: 'philosophy is the science of the connecting principles of nature'. This attitude of mind is reflected in the idea that education is of the whole person, not just one part of the mind or body, as in training; and it is characterised by openness to ideas and experiences and a willingness to change in response to these ideas and experiences.

It is difficult to contemplate how such an attitude of mind can be encouraged by the educational process. It might be argued that this openness is present in some students and not in others and it cannot be put there if it is not there already. This is a particular problem in the context of vocational courses like medicine because students tend to regard as valuable only those classes which they see as directly relevant to the job of being a doctor. Medical students have traditionally looked down on subjects such as psychology or sociology

which they see as being at best common sense and at worst unimportant to their future clinical work.

Peters' third point about an educational process is related to the second. We have characterised the educated person as someone who is open to new ideas and who is able to see connections and make links between different disciplines. It follows from this that such a person must be open to being changed by these new thoughts and ideas or, to use Peters' terminology, his whole 'outlook may be transformed'. It is possible for a person to be trained as a car mechanic or a cook and not be changed by the experience. The knowledge they have gained remains external to themselves as persons and can be lifted and laid when required. In contrast, an educational process involves the whole person and the knowledge they acquire becomes integral to them and cannot be laid aside; rather it affects other thoughts and experiences they have and may unexpectedly bring about new ideas when they are focusing on an apparently unrelated subject.

We can say, therefore, that an educational process should bring about change in its subject. Peters takes this further, in a fourth point about education, by saying that the change should be for the better, not the worse[168]. In other words, something valuable or worthwhile for its own sake must be passed on by any process regarded as education. This point may seem to make any discussion about whether the process of learning medicine should properly be called education a pointless one as medicine is clearly a worthwhile thing to do. However, Peters' point is related to the value of the knowledge and the

subject *in itself* rather than on what it equips the student to do. In medicine, the study of things like human biology, psychology and sociology may be regarded as intrinsically valuable as these subjects provide ways of making sense of the world and widening the student's understanding of it. A degree in arts does not equip students for any particular job but those who ask arts students, 'What is your degree for?' are entirely missing this point. The point of doing it is purely for the experience of studying subjects which will broaden the mind and widen the outlook in a valuable way.

Part of a degree in medicine involves learning things which cannot be regarded as intrinsically valuable or as making a change in the person who learns them. The knowledge of how to take blood from a patient is only of extrinsic value, as assisting in patient care, and in no other way. Repeating the act many times may make the students more skilled and dextrous but it will make no change in them cognitively. This is not to say that being trained in this skill is not important; education and training must go hand in hand in learning medicine.

It follows from this fourth point about education that if the educational process should aim to bring about a positive change in someone through the study of something worthwhile then the person engaged in the process should be interested in, and come to care about, what they are doing[169]. It would be difficult to call someone educated who had been through a degree in English literature and after graduating never picked up a novel or read a poem again. Education is not a

process that ends after school or university is finished. As Peters' expresses it:

> 'to be educated is not to have arrived; it is to travel with a different view.'[170]

Fifthly, if the educated person is to care about his subject and to allow it to change his outlook the educator must adopt person-respecting methods in his educational approach. Learning by coercion, indoctrination or repetition cannot be called education as it will not involve understanding or widening of the person's perspective, as I have described. Knowledge gained in this way will tend to be 'inert'[171] with no possibility of change or development. Training can involve processes such as coercion, imitation and repetition[172]. A surgeon who wishes to be trained in laparoscopic surgery must begin by copying his superior's technique and then developing his own by repeating the operation many times. It would be perfectly legitimate in this training process for the teacher to insist that the trainee surgeon performed the operation in a certain way if this was the safest and easiest way to get the best results. But this could not count as an educational process.

In summary, then, we can say that an educational process must lead to an opening out and a broadening of the educated person's perspective, and what is learnt should be have intrinsic value. The educated person should be open to being changed by the process, and that change should be positive and valuable. In contrast, training may require a narrowing of the focus to concentrate on learning a specific task and there is no expectation that the trained person will be changed by this

process or that he will think differently about the world as a result. Rote learning, imitation and even coercion, may be useful techniques for training, but these have no place in the process of education.

Where does the process of learning medicine fit in with these ideas on training and education?[173] We might want to suggest that, as medicine is a vocational course whose aim is to produce people who can work as doctors at the time when they complete the course, it is primarily a training process. This conclusion might seem, in the light of my first point about the distinction between education and training, to have some validity. In contrast to students who graduate with arts degrees, for students who have taken a degree in medicine it is quite clear what their course is *for*, and we might describe them as 'trained' to be doctors. Inasmuch as the medical degree has this narrow focus of preparing students to be doctors it might again be more appropriately termed a training activity rather than an educational one. However, this is an oversimplified account and can be criticised in three ways.

Firstly, educational as well as training activities take place within the context of a medical degree. Students may be trained in the skills of clinical examination by copying an experienced clinician but they also take courses in which they learn about biochemistry, physiology and human anatomy. These courses can be taught in a way that encourages a broad understanding of the human body and its functions in the normal state - understanding which is valuable for its own sake and can be the focus of continuing interest and study beyond graduation.

Secondly, one of the points about a training activity was that it has a narrow focus which prepares the trainee for a defined task. It would be very difficult to describe the task of the doctor in this way. Medicine comprises many jobs and requires adaptability in its practitioners. Rightly or wrongly (see 3.5), patients expectations of their doctors are wide and spread beyond the confines of any narrowly defined clinical training. It would be inappropriate, therefore, to describe the process of preparing students for the job of being doctors as having a narrow focus.

The third criticism of my initial description of medicine as a training involves a challenge to the distinctions made by Peters between education and training. These distinctions need not be as exclusive as has been suggested. The account given above assumes that an educational process aims at the growth of understanding (an aim intrinsic to the activity) and that a training process aims at gaining some skill which will make no difference to the understanding the trainee has about what he is engaged in (an aim extrinsic to the activity). However, this may not be the case in all situations. It may be that in order for an educational aim to be achieved (i.e. for understanding to be advanced) the student needs to achieve a training aim first. An example here might be that for a student fully to understand the three dimensional anatomy of a woman's pelvis he or she must first learn the skill of pelvic examination.

In conclusion, then, preparing students to become doctors is both an educational and a training activity. In that both these processes are

involved, and that medicine has a broad focus, it is a legitimate concern of universities.

I said that the 'humane doctor' is broadly educated and has an ethical capacity. The question now arises as to whether, and if so how, a medical course can provide a broad education and at the same time improve the ethical capacity of its students. I shall begin with the question of teaching morality or ethics.

5.3 TEACHING MORALITY

As we have seen, the doctor has evidence-based knowledge and skills, and applies them in a humane manner in the clinic. The problem of how best to teach the knowledge and skills is a large topic on its own. Medical schools have been experimenting world-wide on 'problem-based learning' and other methods. The jury is still out on these experiments, and I shall not here enter into these debates. Just as difficult is the question of whether, and if so how, humane attitudes can be taught, and, if they can be taught, what room there can be in the curriculum for such teaching and how can it be integrated with the aims and objectives of medical education. These are the questions which will concern me in the next few sections of this chapter.

There can be some concerns, as I have said, about whether the teaching of morality and attitudes to medical students is successful or even possible. It may be that the only way some students will learn such things is by experiencing more of life for themselves. However, the reality is that those of us who are involved in the education of future doctors have an obligation both to the students, to prepare them for the problems they will encounter, and to their future patients, who need to be protected against the insensitivities of the young. The GMC lists twelve 'attitudinal objectives' in *Tomorrow's Doctors*[174] and these include:

(a) respect for patients and colleagues that encompasses, without prejudice, diversity of background and opportunity, language, culture and way of life; and

(e) awareness of the moral and ethical responsibilities involved in individual patient care and in the provision of care to populations of patients; such awareness must be developed early in the course.

Hence, teaching morality or ethics is a curriculum requirement.

I will discuss four methods of raising awareness of attitudes and of moral issues. They are not, of course, exhaustive or exclusive, and indeed the employment of a combination of them would be desirable. As an introduction, however, I shall consider the logically prior idea of the morally good doctor.

5.3.1 The morally good doctor

There is an element of the logically odd in the idea of the morally good doctor which can be brought out if we compare it with the idea of the morally good plumber or the morally good airline pilot. In the (highly unlikely) circumstance of someone saying 'Mr X is a morally good airline pilot' we might judge that two claims had been run together: 'Mr X is an airline pilot' and 'Mr X is morally good'. These two claims are only contingently connected, and are oddly yoked together in that we tend to appraise morally and appraise technically in different types of context. Thus it would be perfectly possible for someone to be a pilot (or a plumber, or a musician, or a systems analyst, or a gardener) and not be morally good. It is even possible for someone to be a *good* pilot, plumber, musician, systems analyst, gardener, and not morally good. For in these cases, the occupational names refer to the technical skills or sets of skills which define a given occupation, whereas the term 'morally good' refers to the character of the person as such who

happens to have the skills. Moreover, the technician may even exercise the skills for a bad end. For example, let us imagine a good (i.e. highly skilled) computer operator who is not only morally bad, in that he exploits his employees, beats his wife etc., but also uses his computer skills to hack into confidential files about patients which he proceeds to sell to insurance companies. Thus we can say of some skilled persons (i.e. a good pilot, builder ...) that (a) personally they are bad, and (b) that they may sometimes use their skills for a bad end.

Can the same be said of the doctor? Plato certainly thought so. He is quite explicit that the good doctor can be a good poisoner. He adopts this position because, in common with other Greek thinkers, he classifies medicine as a *techne,* a craft comparable to that of the carpenter or ship's captain. For Plato, the 'good doctor' is 'good at' something: moral goodness in our sense does not come into it (Plato, *Republic.* Bk. 1). Indeed, the Hippocratic Oath, which requires the physician to work for the benefit of and not to harm patients, is probably not concerned with 'beneficence' and 'non-maleficence' in the modern sense. The Hippocratic Oath refers to the 'art' i.e. 'craft' of medicine and is concerned that the craftsman (the physician) should not attempt to do what his skills do not enable him to do to his materials (patients). In terms of this approach the good doctor will certainly have virtues, but they will be the virtues of the good craftsman rather than moral virtues in our modern sense. To teach someone to be a good doctor would therefore be to teach a complex craft. Plato does, of course, discuss the question of whether moral virtue can be taught, but he does not think that moral virtue is a *techne.*

If we agree with Plato, then, we are agreeing that the phrase 'morally good doctor' is odd because of the juxtaposition of technical excellence and moral excellence in the one phrase. But is Plato right in seeing the practice of medicine as just a *techne,* or more accurately, should we in the modern world think of medicine as just a set of skills? Are there any special moral qualities which are needed by the doctor *qua* doctor?

The dominant fashion in medical ethics for the last twenty years has been to assert that a doctor requires the following moral qualities: a desire to avoid harming the patient (non-maleficence), a desire to help (beneficence), a desire to act justly and a desire to respect the patient's autonomous decisions. The trouble with these 'four principles' is not that they are irrelevant to the life of a doctor: it is that they are relevant to any occupation, because they are among the basic principles governing harmonious and co-operative social life. There is nothing specific and essential to medicine about them. Are there any moral qualities which are specific to, or at least integral to, the practice of medicine?

To find these we must first look at what doctors actually do, and what they do is intimately connected with the needs of patients (3.5). Typically, patients will have an illness, disease, injury, ailment (all of them real or imagined), or will require advice on diet, contraception or future lifestyle. As a result of their real or imaginary conditions patients will feel vulnerable, confused, insecure, powerless, hopeless, aggressive, despondent.... To respond well to patients who may exhibit a range of these characteristics a doctor will need to be humane

and compassionate, to be imaginative in the sense of being able to see the problem from the patient's perspective , and to convey calmness and equanimity. Other occupations may also need such qualities, but they are integral to the practice of medicine. In other words, the practice of medicine is not simply the exercise of a *techne* , because moral qualities are built into it. It will follow that the oddness of the phrase 'morally good doctor' is not that of an incongruous yoking together, but that of verbal redundancy.

The position I have reached is sufficiently complex to require re-statement. We began by drawing attention to the fact that the expression 'morally good doctor' is logically odd. If we construe the oddness in terms of an analogy with 'morally good carpenter' it will consist in the running together of two distinct modes of appraisal - the technical and the moral. If the practice of medicine were simply the exercise of a *techne* or set of skills we would have correctly identified the source of the oddness. But medicine is more than a *techne*. Certain moral virtues (not the 'four principles') are intimately bound up with the practice of medicine: the good doctor must have at least some moral virtues. In other words, at least some qualities of the morally good person, such as compassion, imagination and equanimity, must be built into the concept of the good doctor. Because of the nature of the material on which the doctor works - human beings - the art of medicine must be more than simply a technique. To put it another way, the concept of a doctor is not morally neutral, as that of 'carpenter' or 'pilot' might be; it is evaluative. Hence the oddness of the phrase 'morally good doctor' is the oddness of pleonasm; for doctors to

be morally good is for them to act as good doctors. This is not to say that doctors must have every moral virtue, but only that good medical practice must be humane and governed by practical wisdom or *phronesis* . We hope, of course, that the doctor also acts in terms of the 'four principles', but then we *all* should, for they are amongst the principles of good citizenship, rather than anything especially to do with medicine.

5.3.2 Methods of teaching medical ethics

I shall not discuss methods in detail here, for there is a large literature[175 176 177 178 179], but simply mention four methods which can be used in conjunction. The first is the most traditional and consists of a lecture, often given by a moral philosopher, on basic theories of moral philosophy. Unless this is well done it can easily seem remote and abstract to medical students, although it can be much more successful with practising doctors who have already experienced problems for themselves in the clinic. The initial impetus to the health care ethics movement came from a fusion of medical concerns with moral philosophy, and that is still the main source of energy. When moral philosophy dominates, however, the discussion can easily become too abstract. The reason is that philosophers tend to use fanciful examples to test the edges of concepts. But when this practice is carried over into the teaching of medical ethics it can seem alien to medical realism. One antidote to abstraction is to use case-histories. This is the second and most common method of teaching ethics. It appeals to students because actual cases can be used and this creates the atmosphere of realism which is essential if medicine, nursing, or

other health care students are to treat the subject seriously. Certainly it is important that cases should be related to general principles and broad lessons drawn from such discussion, but without the clinical details students will lose interest.

Reservations about the 'case-history approach' to the teaching of medical ethics have been expressed by Coope[180]. He makes three points: that case histories can suggest that moral decision making is harder than it really is, that factual details can obscure the moral features (if any) in a case and that the very consideration of some sorts of cases can be corrupting or de-sensitising. There is something of merit in all three points, although the criticisms are robustly (perhaps too robustly) rejected by Gillon[181], for all that is really being advocated by Coope is care and realism in the case-histories that are chosen. Clearly, case-histories have an important role to play if they are seen as 'triggers' to discussion, and as stimuli for thought. They are essentially 'coat-pegs' on which to hang concepts and views. I shall not discuss them further, since their effectiveness is widely known.

A third method of teaching ethics is the use of a diary. Students are encouraged to record problems they may encounter in their clinical work, or which they note in the work of others. This again is effective in that it relates ethics to the student's own experiences.
A fourth method is the use of the arts. This is now being widely recommended. What can medical students learn from the arts? Downie[182] has argued that literature and drama gives rise to moral questions and also develop our capacities to answer them. It is

tempting to follow the philosophers and think of the resolution of moral questions in terms of the application of principles supported by rational argument. Principles and logic certainly have their place, but the arts can extend our imaginations and deepen our sympathies and these capacities are also essential to the wise, humane and caring doctor. The point here is that philosophers, like biological and social scientists, must stand back from the phenomena and present their accounts in detached prose style. On the other hand, the arts involve us directly and make us vividly and emotionally aware of what it is like to be in the situation which the philosopher and social scientist discuss, of what it means to be ill oneself, or to be a relative or helper of someone who is ill. In this way the arts develop compassion, stressed by Gregory (3.4). Moreover, the arts can provide a cognitive shaping to emotion. There is a danger that those in the caring professions develop a generalised attitude of caring. The arts can help us develop what I shall call compassion-in-the-particular-situation.

I have already maintained (3.3) that communication skills are of importance to the good doctor. Downie argues[183] that this is one area to which the arts can make a major contribution. For example, literature focuses attention on language, on the connotations and resonances of words used to describe or express feelings and fears. There is a two-way process here. We tend to concentrate on the doctor's communication with the patient, because it is for failures there that doctors are often criticised. A study of the many ways in which literary writers communicate with their readers can be of help here. But patients also try to communicate, and awareness of the nature of

the anecdote (2.5) can help doctors to understand what patients are telling them and how patients perceive their illnesses[184].

Painting, as Downie points out, brings out the non-verbal ways in which feelings or attitudes can be expressed. Consider, for example, the sympathetic portrayal of the doctor in the painting 'The Doctor' by Sir Luke Fildes[185], which hangs in the Tate Gallery in London. The main features of this painting (from the medical point of view) are the curve of the doctor's back as he leans forward, the concentration of his gaze and the shadowy figure of the anxious parents behind the sick child's bed. As an illustration of the doctor-patient relationship this has an eloquent sensitivity which communicates itself more directly than a treatise. No amount of science, or philosophy can succeed in conveying with the subtlety and infinite variety of the arts this basic aspect of human relationships and therefore of doctor-patient relationships.

Teaching communication skills can be seen as a '*techne* ', simply a morally neutral skill. But if it is taught via the arts it is embedded into a moral framework. The student learns by imaginative identification with the situation depicted in the art.

These then are four methods of teaching morality. There are others, such as role-play, but they are all compatible and some combination would be desirable. It is to be hoped that these methods and others will raise the ethical consciousness of medical students. But ethical sensitivity is only one of the two components in the humane attitude. I

shall now move on to consider other broader aspects of the humane attitude.

5.4 MEDICAL ETHOS

Before making a suggestion about how the second component in the humane attitude might be cultivated I shall outline the nature of the unconscious resistance within medicine to such a development. It derives from what I shall call, following Downie and Charlton, the medical 'ethos'[186]. I shall summarise their argument.

The medical ethos is a practical one, in that it is directed towards action. This would seem to derive from the constraints of clinical practice, in which a decision must always be made, even if that decision is to postpone the decision.

This shows in the medical view of science. As I have argued (1.7), for a doctor, science is a goal-directed activity, and the direction is towards improved clinical practice. In contrast, the scientist is regulated by goals *internal* to science itself (this is what is meant by science 'for its own sake'). It also shows in medical impatience with speculation of all kinds: indeed a 'short attention span', sometimes showing itself as a hard-headed approach, is often a fault of clinicians - although it is a 'fault' which has the benefits of efficiency and productivity in clinical practice.

The authors point out that 'decision' is a key word, because it is also characteristic of doctors to be decisive. When the caricature doctor is at fault it is more often for deciding too soon (without sufficient consideration of evidence) than too late: at any rate doctors do not

usually experience much psychological difficulty about making up their minds. Such resolution contrasts with the attitudes of some other professions - and is one explanation of why doctors tend to adopt a dominant role on committees! Again, medicine is characterised by a high level of collegiality or solidarity. This is a great source of strength, as well as a possible source of harm, as when in the face of any criticism there is a tendency for doctors always to stick together. Downie and Charlton then proceed to examine how medical education is involved in the process of producing the medical ethos.

One part is the evolution of an *esprit de corps.* Various factors combine to produce *esprit de corps* within the medical school. Firstly, the students are divided into classes (often large) each of which is treated as a unit, and the classes are all taught together in big lectures and practical sessions whenever this is possible. Furthermore, all the students in the same class share a curriculum which is broadly, and sometimes exactly, the same as those of other class members. Such features are common to many medical schools during the preclinical period. The sheer bulk of information may forcibly impose the subject on the minds of the undergraduates. To some extent the medical students are usually physically set apart from other undergraduates in a medical school or college. And, commonly, curricular activities are reinforced by informal students' societies. Such factors may play a greater or lesser role in inculcating a sense of loyalty, tradition, or whatever it might be called, even in the earliest years; an attitude which becomes directed partly at the institution and its members, but also towards medicine itself.

In the clinical years the process gathers momentum; the university terms are longer and vacations shorter; a standard of quasi-professional behaviour and dress is encouraged; 'out of hours' study is increasingly expected. Some factors are established explicitly, by lecture or textbook; but most of the medical ethos comes from apprenticeship, from the learning process described as 'modelling', whereby the acolyte becomes identified with the 'master' across a whole range of interlinking behaviour, attitudes, and emotions. This is the time during which the beginnings of a 'bedside manner' are adopted, and ways of relating to patients, other health care workers and the public are internalised. This induction may be very enjoyable; and it is usual that the clinical years at medical school are the time of the greatest idealism concerning the values of a medical way of life.

Downie and Charlton point out that the fact of professional solidarity is a double-edged weapon, but its benefits should not be underestimated. In the first place, medicine is intrinsically an unpleasant job, in the sense that it involves contact with blood, sweat and tears (and worse); but , more seriously, it involves life-and death decisions and actions. All of which means that a mistake may have consequences of the utmost seriousness - and everybody makes mistakes. It is of the greatest importance that, on the one hand, mistakes can be acknowledged and corrected; and, on the other hand, that the junior doctor is supported through the mistakes to develop the highest level of skill (because if 'everybody makes mistakes' then this applies particularly to the inexperienced new recruit).

The important point for my argument is that the medical ethos is not the whole story because it is inevitably incomplete. It is concerned only with certain limited aspects of life - with illness and disease. Medical solidarity can allow medicine to overstep its bounds - it can lead to a lack of perspective. If medicine is to function properly it must be placed within the scheme of society as a whole - its limits defined, its relationship to other world-views made clear. It is not satisfactory that the medical viewpoint should simply take over all other viewpoints by default, that the problems of life should all be medicalised. So that while the existence of what I have called medical ethos is important, I must also emphasise that this will be a good thing only if it is taken in perspective. Doctors, through a combination of excessive busyness and solidarity, can easily lose their broad perspectives to become, not just workaholic, but blinkered to the point of not knowing *when* to use their medical skill - although they might know very well *how*. This is often said to be the characteristic sin of the surgeon - yet it applies across a much wider spread of the profession. Hence it is important for the humane doctor to have not only ethical sensitivity but a broad perspective on life. This is necessary to ensure insightful judgement.

5.5 BROADENING THE ETHOS

Granted this resistance to a broad humane outlook in medicine, how, if at all, can we teach medical students and anyone else in the health care profession to acquire the humane qualities necessary for excellence in the practice of the profession? Or how can we broaden the ethos? One suggestion is that the practice of medicine can be humanised through the experience of what can be called a 'counter culture' [187].

In an academic sense, in medical education, this may mean exposing students to other disciplines in other academic contexts. Medical students often have the impression, and are encouraged in it by medical teachers, that they have an intellectual and moral superiority over other students. Perhaps it should be part of their education - it is in some universities - to be obliged to submit themselves to other disciplines. In the USA, for example, medicine is most often a postgraduate degree. This has two beneficial consequences: students are a little more mature when they begin their medical studies, and they have already been exposed to an academic counter culture. We can even go beyond the purely academic and suggest that students should be encouraged to, and should be given curriculum space to, engage in activities which are not academic at all - sport, youth work and so on. It is from this counter culture, rather than from the exclusive study of medical ethics, that a sense of our common humanity may come.

But it is important to remember that while the development of a broad vision is an important aspect of a doctor's humane attitude, there is another aspect. Sometimes decisions are complex, and sometimes policy decisions are required. In this second area ethical skills can be helpful, provided they are supplemented by scientific knowledge.

In summary, I drew attention to the odd-sounding concept of 'the morally good doctor'. At first analysis this seemed to be nothing other than the gluing together of the idea of the good, i.e. skilled doctor, and the morally good person. But on more careful examination it emerged that there are some moral qualities necessary for the practice of the art of medicine, such as equanimity and compassion. I suggested that these moral ideas are an important component in the broader concept of the 'humane doctor', or the doctor who exercises *phronesis* in addition to *techne.* Can we teach students to acquire this ethical component? Lectures on moral philosophy, case studies, the keeping of diaries, and the arts can all help in learning decision making , but for the development of other aspects of the humane attitude, immersion in a counter culture is the central idea.

5.6 THE HUMANE ATTITUDE AND PRACTICALITIES

It might be argued that even if my views on the humane doctor have something to be said for them they have no realistic hope of being adopted by medical faculties. Now this would have been true a few years ago, but an influential and authoritative document has changed all that. The new structure of the medical course laid down by the GMC in their document Tomorrow's Doctors [188] provides a golden opportunity for non-medical subjects to be introduced in some depth to medical students in the form of special study modules (SSMs). Before describing the content of two such modules I will explain in general terms what modules are designed to achieve in the new curriculum structure.

Tomorrow's Doctors describes the SSMs in this way :

> ' They are no less important than the core curriculum but they focus not on the immediate requirements of the pre-registration year but on the long term intellectual and attitudinal demands of a professional life that will constantly be challenged by growth of knowledge and change of circumstance.....They will give scope for variation in educational style and content and will provide opportunity for experimentation in curriculum design.....the overall consequence will be a widening of the outlets for the expression of individuality and the competitiveness of medical schools.' (p. 7)

And in commenting on the proposed subject matter of the modules it says :

> 'the modules offered will depend on the interests, resources and individual enthusiasms of medical school staff and to some extent on the wider range of opportunities within their universities. It will be anticipated that the majority of modules will be based on subjects directly related to medicine .....but they need not be exclusively so. As medical research advances, it will inevitably become increasingly dependent on the ideas and techniques of other disciplines.....it is hoped that the student of tomorrow may be drawn to some of these other disciplines and that opportunities to study, for example, a language or to undertake a project related to literature, or the history of medicine, may be offered.'(p. 9)

The implication, then, is that as well as contributing to the process of making a doctor the modules should be a source of intellectual challenge for the students, harnessing their individual interests and enthusiasms.

The GMC's recommendations are timely. A survey of the hopes and concerns of a class of first year entrants to medical school[189] has identified 'self-fulfilment' and 'personal challenge and variety' as their second most important hope (after the desire to help patients). Their most important concern (after family and personal relationships) related to a 'loss of self' ; in particular there was a fear of becoming 'isolated' about 'issues outside [of] medicine' . Medical schools are fortunate in that they attract intelligent and well motivated students, but these students often have interests which lie outside the narrowly

scientific and medical content of the core. The SSMs clearly have a role in stimulating these individual interests and preserving and developing the sense of 'self' and of self-awareness which is essential to sympathetic doctoring.

5.6.1 Three categories of SSM

The GMC in 'Tomorrow's' Doctors' stress that SSMs should not deal entirely with medical subject matter, although most of them will, and they appear to identify three different types of SSM: the medical, the ancillary medical; and the non medical. It is important to stress that there are three different types of SSM, since, with the narrowing of the compulsory part of the curriculum within the core, the SSMs might become merely a repository for all the medical subjects that have been ejected. The GMC make the point that medicine cannot exist in a vacuum and that it is becoming increasingly important that students have some understanding of other disciplines on which medicine is increasingly coming to rely e.g. mathematics, physics and computing. SSMs with this kind of subject matter we might call 'ancillary medical' SSMs as they have a non-medical subject matter but are directly relevant to the practice of medicine. A further distinction should be made between these first two types of SSM (the purely medical and the ancillary medical) and a third type, the 'non-medical'. *Tomorrow's' Doctors* suggested that students might study a language, literature or history. This is a radical suggestion as medical students have never before been given time within the curriculum to study subjects with no direct relevance to medicine. I wish to explore in more detail the justification for the inclusion of these different types of SSMs in the

new style curriculum, concentrating in particular on the ancillary medical and non medical options.

(a) Medical SSMs

The inclusion of purely medical SSMs is easy to justify. In a crowded curriculum (even after pruning) it is impossible to include every medical subject area relevant to the experience of doctors. Here is an opportunity for students to pursue their own medical interests and for medical schools to demonstrate their strengths. For instance, not every medical school will have experts on tropical medicine able to offer a course to students. The medical SSMs, therefore, provide a chance for specialised work at the undergraduate level.

It is important to stress, however, that to make the SSMs merely a series of clinical clerkships in minor medical specialities would be to defeat the purpose of radical curriculum change. The SSMs may indeed provide students with the opportunity to study in more detail a medical subject not included in the core but this period of study should differ from their mainstream clinical teaching in such a way that the learning process has not purely been one of osmosis but also of personal discovery (5.2).

(b) Ancillary medical SSMs

Tomorrow's' Doctors makes a case for what I have called ancillary medical subjects, such as mathematics, physics, the social sciences and philosophy, on the basis that the 'ideas and techniques' of these disciplines are increasingly informing the development of medicine . It

is in this context that the concept of transferable skills can be introduced. Transferable skills are those which are learned in a non medical context and then are transferred to be used in a medical situation. This concept has been discussed in relation to thinking skills courses by Professor N. C. Boreham[190]. He expresses some doubt about whether a skill learned in one context can be transferred to another, particularly if the skill has been learned in a 'classroom' context and is to be used in a practical situation. However, if the skill learned is the *same* skill then this is surely possible. An example of this might be computing skills. There might also be ancillary courses - often seen in the context of business and industry - where students learn about working in a team. The advantage of learning these skills in a context outwith medicine is that students can more easily focus on the particular skill they wish to acquire without worrying about such things as their lack of knowledge in front of patients. I will discuss the acquisition of the skill of analysis of argument in the context of an SSM in philosophy in a later section (5.9). There are, therefore, a wide range of ancillary subjects which might contribute to the training of doctors and the choice depends on the interests and ingenuity of the particular medical school and its university.

(c) Non-medical SSMs

Thirdly, let us turn to the non-medical subjects. In general terms, the GMC sees SSMs as fulfilling an educational aim in as much as the students undertaking them will study a subject in depth and that it will be a subject that excites their interest and which they will research personally. This certainly applies to non-medical SSMs. However,

learning medicine is also a training exercise[191] and even non-medical subjects can provide training in skills which are relevant to the practice of medicine. In addition, non-medical subjects can help develop the human qualities essential in a good doctor; and involvement with other disciplines can help medical students avoid the insularity which characterises medical classes. I wish now to discuss in more detail the four areas where non-medical subjects might make a contribution to the development of future doctors: education, training, development of personal qualities and broadening social contacts. It will become clear how these are elements in the perspectival component of the humane attitude, and as such will influence the doctor's insightful judgements.

5.7 THE HUMANE ATTITUDE

5.7.1 Education

As I have discussed in 5.2 an educational activity should satisfy certain criteria: it should be worthwhile and valuable for its own sake; it should have a wide cognitive perspective; it should stimulate interest and dedication in the student; and it should transform his outlook. A course in philosophy, for example, will allow the student a chance to read some of the great thinkers and help him to understand different ways of looking at the world. A course in medical history can put present medical discoveries in perspective and give the student some insight into the fact that medical knowledge is not set in stone, a strong impetus for continuing his education through life. Such courses will give students the opportunity to stand outside their more narrowly focused medical activities and look on them from a different viewpoint thus encouraging a critical and questioning attitude. Medical schools are ideally situated to institute such courses as they are, for the most part, within universities where experts in many disciplines are on hand.

5.7.2 Training and transferable skills

Non-medical subjects can provide training in skills which are useful in a medical context. I have already introduced the idea of transferable skills and it can be used once again to justify the training potential of non-medical subjects. One example here might be a course in media studies. Here the student might be expected to learn about interviewing people and to use this skill in the context of interviewing

patients. The role of the medical interviewer is the same as that of the journalist in that both are trying to get at the truth of the situation. They differ in that the journalist aims purely to present the information to an audience, whereas the doctor aims to use the information to make a diagnosis and decide on treatment. However, medical students can learn from the journalist's investigative approach the importance of focusing entirely on what the patient is saying. In the non-medical context this can be practised without at the same time being distracted by giving the patient an answer. A subject like philosophy (which also fulfils the educational criteria) can teach students to order thoughts, construct an argument and reach a logical conclusion. These skills are essential in diagnosis where the doctor must gather information to support a thesis and go through logical steps to reach a conclusion. This is an important consideration in medical training.

5.7.3 Personal development

We have seen that non-medical subjects should be allowed in SSMs because of their educational and training value. However, the practice of medicine is not just concerned with knowledge and skills but also with a humane and sympathetic approach to people. JS. Mill in his essay *On Liberty* asserted:

> 'It really is of importance, not only what men do, but also what manner of men they are that do it. Among the works of men, which human life is rightly employed in perfecting and beautifying, the first in importance surely is man himself.'[192]

There has certainly not been much thought given to 'perfecting and beautifying' medical students through their educational process; rather that process has tended to brutalise and dehumanise[193]. It is here, perhaps, that a study of the arts, in the form of plays, poems, books and paintings, can best be justified. Of course, studying the arts is also educational in that it widens the understanding and has an intrinsic value. But in demanding an emotional response the arts allow the reader or viewer to discover their own hidden values and prejudices and to challenge them. In other words, the arts help students to develop self-awareness and enhance their understanding of the human condition. For young people, who emerge at the age of 22 or 23 to become doctors, the arts may provide some experience of life, albeit at second hand, which is essential for their development as caring people.

One example of this potential of the arts to challenge values and beliefs would be in a study of the book *Trainspotting* by Irvine Welsh[194]. This book deals with the story of a young drug user and his friends and is graphic in its descriptions of the process of 'shooting up' and uncompromising in its portrayal of the degradation that addiction brings. But in his use of humour and pathos, the author gives the addicts a human face. This book would force students to face up to their attitudes to drug users so that they can recognise and overcome any feelings of fear or disgust and help those who present to them as patients. So far in medicine it has been the role of ethics teaching to instruct students on their approach to patients but an understanding of ethical principles will not develop the sensitivities in the way that a study of the arts can.

5.7.4 Reducing insularity

Finally, in the course of studying non-medical subjects, students will have the opportunity of meeting people in other faculties. Medical classes tend to be rather insular because (as I have said), unlike in other faculties, the whole year follows the same curriculum. SSMs can provide some variety for students and allow them to show their unique interests. Having the chance to get to know teachers and students in other disciplines will help break this insularity and may also, ultimately, foster better relationships between doctors and the outside world.

5.7.5 Devaluing SSMs

Despite the contribution which ancillary and non-medical SSMs can make to enriching the life of medical practice there is a risk that they may be marginalised in the curriculum. This process can take the obvious form of discouraging students from taking them by stressing the importance of the medical SSMs in passing final exams. One way round this is to follow the example of Aberdeen's new curriculum where SSMs have been placed after finals are completed.

But there is a more subtle way of devaluing non-medical SSMs and SSMs in general. The problem is that if SSMs are to be given a 6-8 week slot, or two to be covered in 10 weeks[195], then students will not be able to 'master comprehensively'[196] the subject they have chosen. It would therefore be better if medical students could attend classes taught in other faculties throughout a whole term or even a full year of study. This must surely be possible now that medical students'

timetables are no longer going to be as crammed as in the past. This kind of scheme also has the advantage of making use of existing courses rather than having to create new ones when medical teachers are much exercised already with creating the core. If such study is not possible, then courses will have to be carefully designed so that they do not merely provide a skim through the subject but provide the student with a satisfying educational experience.

In conclusion, the introduction of SSMs to the curriculum has been proposed in order to improve the educational profile of medical schools. But in providing the chance to offer many subjects, not just medical, a new educational opportunity can be exploited. The neglected area of personal development can be more explicitly addressed through a study of the arts; and study in other disciplines will help future doctors appreciate the knowledge and skills of others. If the GMC's proposed revolution in medical education is to work then the opportunities presented by SSMs must be grasped with both hands. Medical schools should make use of their wider university context to allow students to study courses offered in other faculties and should not obstruct their enthusiasms by rigid timetableing or too much assessment. We may, then, in ten years time start producing doctors with a thirst to pursue their education throughout their lives and who are more rounded human beings.

5.8 AIMS AND OBJECTIVES

5.8.1 Performance objectives

The standard educational approach when creating new courses in medical schools at present is to start by defining the course 'objectives'. The category of objective in use is the 'performance objective'. Performance objectives are behavioural indicators of the ways in which students will have changed by the end of a course[197]. Their advantages include communication of intent to prospective and actual students and to other academics, the need to consider in detail the end points or outcomes of teaching, and the provision of a basis for a systematic approach to course design, including assessment.

But not all useful learning is both predictable at the outset and demonstrable by the performance of some newly-learned skill[198]. An objectives-led approach also implies that the *outcome* of learning is the only important aspect, with the *process* being irrelevant. In the course described above, dependence upon performance objectives can be seen as both restrictive and destructive. For example,(a) it is likely that some changes which will occur in students will not have been foreseen[199] ; (b) the precise direction of many of the changes is unpredictable, and dependent upon such factors as pre-existing individual knowledge, attitudes and maturity; (c) many changes will not be quantifiable, and therefore, not conducive to precise objective formulation. Indeed, this may be true of any course in which the emphasis is on attaining knowledge and attitudes rather than skills, or where the aim is to educate rather than train. These are some of the

objections to objectives; others have been considered by Macdonald-Ross[200] and Eisner[201]. The latter moved to correct the imbalance caused by exclusive emphasis on 'performance objectives' by proposing the concept of 'expressive objectives'.

5.8.2 Expressive objectives

The focus of 'expressive objectives' is not on the student's ability to perform a task, but with less demonstrable changes like the development of skills and strategies in approaching problems, or appreciation of the ambiguities and interpretative problems of written or spoken language, or the ability to write a piece of clear and expressive English. 'Expressive objectives', therefore, are concerned with the process aspects of a course rather than the outcome.

Process-led approaches to higher education have been proposed by Stenhouse[202], and more recently by Laurillard[203]. Stenhouse generated a 'process model' for course design, which he describes as more appropriate than objectives models for areas which centre on knowledge and understanding. The aim of this model is to *develop* understanding, rather than to *gain* knowledge. This is done through inquiry and exploration leading to 'induction into knowledge', which cannot be transferred but must come from within; students can be led to knowledge. Essentially, in this model, teaching then becomes a kind of extended conversation[204].

This 'process model' has two important implications for this module. First, development of the teacher is inevitable alongside the

development of the student. Teachers will learn both from the student and from the process of teaching. They can never teach the same way twice. This allows greater evolution , both for the teachers and for the course, than if the course were following a more prescriptive objectives-led model. Secondly, to use the language of social anthropology, the very process of learning can itself generate 'latent' outcomes which may be more important than the 'manifest' outcomes[205]. For example, students might discuss a poem and come to understand that it is open to three interpretations. Knowledge of what these three interpretations are is the 'manifest' outcome' of the discussion. But the 'latent' outcome is that students become aware that what patients say or do may be open to several interpretations. In other words, for a medical student, the importance of discussing a poem may derive from what they learn from the process of discussion itself rather then from its outcome. If we take the analogy of someone going on a journey: their interest may be as much in what is learned on the journey as in the destination.

5.9 SOME POSSIBLE COURSES

Having described the way in which the SSM can contribute to introducing arts and humanities subjects to medical curricula, I will now outline two courses which have been designed for medical students taking SSMs. One is in literature and the other in philosophy. The philosophy module has already been taken by 10 second year medical students and I will describe their response to it, including how they felt it contributed to their development as doctors. By describing the two courses I hope to demonstrate that students will experience a broadening of their educational experience practically- as they will be taught by non-medical teachers and along with arts students - but also in terms of the kind of experience it is. As I have just discussed in 5.8, an objectives-led approach to education which focuses on the *outcome* of the education is not appropriate for courses which aim to develop students' awareness of their personal attributes so the courses focus on a *process*-based approach.

5.9.1 An SSM on Literature

I will describe this module in terms of literature but it would be adaptable, if resources were available, to other arts or some mixture of arts.

For this module to be successful it is important that we attract the right number of enthusiastic students to take it. They are likely to be offered a wide selection of SSMs. How are they to appreciate what this course will have to offer? Many students are attracted to the new curricula

being offered by medical schools and appreciate the change in emphasis from training to education. This SSM expresses the new medical education ethos and will interest students because it will enable them to explore aspects of medical practice in a novel way. Moreover, increased personal contact between students and their teachers in the new curricula also facilitates the dissemination of new ideas in medical education. This module provides a unique opportunity for personal contact and fruitful discussion between students and staff on a wide range of topics pertinent to medical education. It should be noted that courses like this have been run in the past on a voluntary basis both in Glasgow[206] and Melbourne[207] to the acclaim of students.

(a) The course

I propose a four week course which will involve the participation of:

- Students in small groups
- University-based tutors from different departments and faculties
- 'Expert' lecturers to participate in the plenary week.

An outline of the course structure is given in appendix 5.1.

There will be an introductory week, which will include staff and students from all participating departments. The week will be built around a single theme : 'The Links Between Literature and Medicine'. Activities will be mainly small group based and will include:

- Expert presentations and workshops e.g. creative writing, literary criticism, philosophy of literature, other art forms.

- Discussing in small tutor led groups a prescribed set of literary works which have been read in advance (examples of possible texts for the course are given in appendix 5.2).
- Discussion of a piece of work selected in advance by each student for its relevance to the theme of the week.
- A group project of a literary nature to be presented at the end of the week. The scope for this is wide but might include the performance of a short play, the designing of a magazine, or some form of creative writing.
- Discussions between individuals and tutors aiming at identifying projects to be worked on for the rest of the module.
- 'Field visits' - evening attendances at theatres, poetry readings etc.

For the rest of the module the students of each group will work on the assignments they have chosen individually under the guidance of their tutor. Most of this time will be spent in private study but there will be at least 2 tutorial sessions per week, one for the group to meet together and another for the tutor to meet each student separately to discuss their work. The groups will meet again at the end of the module for one day for the reading of creative work and for an evaluation of the module to be carried out.

(b) Assessment

The students' assessment will be based on 2 assignments which they will decide on during the course of the plenary week and work on for the rest of the module.

1. Submitted Essay (minimum 2000 words).

This should be related in some way to medicine and should show evidence of appropriate reading and a critical approach to its analysis. Suitable titles might be;

(a) Take any one or more novels of the nineteenth century in which death and dying play a prominent role. Analyse the attitudes expressed and compare them with our own.

(b) Discuss the portrayal of the doctor in the plays of Ibsen. How can doctors learn from a study of these works?

(c) What can be learned from Wordsworth's poem 'The Idiot Boy' about human attitudes to mental handicap?

(d) Discuss the evolution of the medical soap opera.

2. Creative Piece/Literary Criticism

The second assignment would involve students in some creative writing or (if they do not feel able to do this) an in-depth literary criticism of a work which they would choose with the guidance of their tutor. The main specification should be a relevance to medicine, though a broad view of this relationship is important.

(c) Conclusion

I have outlined an SSM in Medicine and Literature. The impetus towards designing this course has come from the GMC who are expecting medical schools to include a wide range of subjects - not just medical - within the new framework. Literature seems to fit closely the GMC requirements for the content of an SSM. Equally important, it offers an alternative educational approach which stresses the 'process' rather than the 'outcome' of the course. Thus, the course certainly aims

to develop an understanding of the main themes by means of personal inquiry, and the structure of the course encourages this as it is consists of a mixture of individual reading followed, and supported by, reflective and interactive small groups. Furthermore, by having the aim of understanding as the only predicted outcome, this development can proceed in many different directions, all of which may be appropriate, without the fear that the students are 'not doing what they're supposed to'. This model allows greater freedom for the teaching of the course while maximising the learning. It is neither appropriate nor desirable that the outcome of the module (expressed in performance objectives) should dictate and even stultify the achievements of the students involved. It is, therefore, an appropriate module for developing the humane attitude which some influential doctors have found lacking in contemporary medicine[208]. As Sir William Osler put it: 'the humanities are the hormones'[209], they catalyse thought and humanise practice.

This module is more appropriate for students in the senior, clinical years of their medical courses as it is important for them to draw on their experiences with patients as they read the texts. I have not, therefore, as yet had the opportunity to run this module for the students as the new curriculum structure in Glasgow has yet to reach the senior years. I will now describe a module in philosophy which has been run for a group of 10 medical students in their second year. As with the literature module, the focus educationally is not on the learning outcomes of the course but on the process of doing

philosophy and on the skills and understanding that this can contribute to the developing doctor.

5.9.2 An SSM on philosophy: The Individual in Society

In February 1998 the first student intake into the new medical curriculum at Glasgow University took their first group of SSMs and ten of them chose to do a module in philosophy. The title of the module was, 'The Individual in Society; an introduction to social and political philosophy'. This module was a collaboration between the departments of general practice and philosophy and this enabled the medical students to take part of a course which was being taught to students of philosophy in their first year. There are problems with laying on arts courses in medicine and the main one is getting teachers who are prepared to take on the extra burden of teaching medical students. The model provided by this collaboration, where the module 'piggy-backed' on a course in philosophy, may be a useful one for other courses.

It seemed particularly appropriate to include philosophy amongst the first group of SSM options that students could take at Glasgow. The GMC in *Tomorrow's Doctors* said that:

> 'The modules offered will depend on the interests, resources and individual enthusiasms of medical school staff and to some extent on the wider range of opportunities within their universities.' (p.9)

Glasgow University has a long standing tradition in philosophy and major figures such as Francis Hutcheson, Adam Smith and Thomas

Reid were at one time professors of philosophy there. Philosophy has long been considered a central subject in the MA degree. Centuries of endorsement of the educational value of the study of philosophy would certainly be an encouragement to those of us who are interested in education but the course needs to be justified in terms of its relevance to the future development of medical students as doctors.

I will describe the course - it aims, structure and assessment - and go on to show how the two main aims are related to the education of doctors. The question of whether the course succeeded in its long term purpose of broadening the outlook of future doctors cannot yet be answered, but I will describe the initial evaluation by the students and their assessment of whether the course was valuable for them.

(a) The course

The course had two main aims:

1) To encourage the students to adopt the techniques of philosophical analysis in their approach to an argument; and
2) To expose them to the broadening experience of an academic culture different from their own.

The first aim relates to the fact that philosophy can teach students to think and argue in a valid and coherent way. The second aim refers to the idea of a counter culture which I have already discussed (5.5) and relates more to the actual experience of doing the module rather than its content. I will say more about these aims and their importance in the context of medical education later.

The module provided ten second year medical students with the opportunity to spend five weeks studying Plato's *Republic* in the context of a course of lectures on political philosophy. SSMs have the advantage that they are 5 weeks blocks set aside from the rest of the course and students can concentrate solely on their module subjects during this time. The medical students were, therefore, able to fit in with a pre-existing course on political philosophy which was about to start at the same time as their module. The lectures and reading material from this course became part of the module. The co-existence of the two courses had another advantage in that the medical students were taught alongside the arts faculty students and were taught by philosophers who were not specially angling their material at a medical audience. These points are important in terms of the second aim, that of exposing the students to a different academic culture.

The lectures were delivered by two lecturers, one dealing with the text of *The Republic* in some detail, and the other giving an overview of political philosophy from Hobbes onwards. Two seminars involving the whole group were held each week on Mondays and Fridays. The Monday seminar focused on the understanding and analysis of argument. The students were set an analytical exercise to do at the start of the module (see appendix 5.3) and one at the end (appendix 5.4) to see how their analytical skills had progressed. The Friday seminar clarified points raised in relation to the lectures and the reading of the set text. Two seminar papers were set to guide and focus the students' reading, one on 'Plato's views on education', and the other, 'Plato's view of the family'. Apart from attending these

classes the students spent their time reading, writing and, most importantly, thinking.

Assessment of the module consisted of three parts:
1) The class essay, consisting of 70% of the marks. Students were given a choice of two titles: 'Do we have a moral obligation to obey the laws of the state?' and, 'To what extent can one justify the criticisms of democracy which Plato's makes in *The Republic* ?';
2) Two seminar papers, contributing a total of 20%; and
3) The second analytical exercise, which gained 10%.

The students were, therefore, kept quite busy during the module, being involved in an educational experience quite different from what they had encountered at university so far. Most of them had not studied philosophy before and they had certainly not experienced the kind of teaching structure that the module provided. The content of the module, in that they were studying Plato and more general political philosophy, was entirely new to all of them. These issues raise the question of justification of the module in the context of medical education. Of what benefit is five weeks of philosophy to medical students, and why should they learn about Plato? In answering these two questions I will return to a consideration and justification of the two aims of the module.

(b) Why philosophy for medical students?

I have already discussed the subject of transferable skills (5.7.2) and this module is an example of a non-medical subject which can teach

doctors in training useful skills. One of the major criticisms levelled at recent medical education has been that students, particularly in the pre-clinical years of their education, have been so busy digesting large amounts of information, they have never had the opportunity to think for themselves. Once they start their clinical training, however, they are expected to be able to piece together the various bits of information that make up a case history and come to a logical conclusion on diagnosis. The main reason why philosophy has been a major part of university arts courses for hundreds of years is because it can teach people to think. Clinical diagnosis requires the doctors to be able to sort out information about a patient, order it and construct arguments for or against certain conclusions (diagnoses). Philosophy can teach students how to go about this, but also when conclusions can be strongly or weakly argued, or valid or invalid. A major part of the module focused on leaning about argument and students were taught the steps to take in constructing arguments.

Besides leaning how to do this for themselves, the students also learned to recognise when others were making arguments and when these arguments might be valid or invalid. This was a particular revelation to them (as I will show in the evaluation) as they had been used to accepting much of what they were told. Most of the students commented that they had begun to question received wisdom with much more confidence by the end of the module. In other words, they were beginning to adopt Enlightenment attitudes: *Sapere audi* or, in Kant's paraphrase, 'Have courage to use your own reason'[210].

These two skills, the ability to make an argument and the ability to identify and criticise the arguments of others, both relate to the first aim of the module. As skills, they were part of the training that the module provided. But learning about philosophy is also an educational activity (5.2) and part of the module's value here was that it distanced the students form the pervading culture of their medical education and medical class and placed them in the arts faculty (physically and intellectually) and amongst philosophy students and teachers. This was the second aim of the module: to provide a broadening academic experience and one that the students would recognise and value as different.

(c) Why should medical students study Plato's *Republic* ?

The Republic was chosen as the set text for the module for reasons that are relevant to both of the module aims. To broaden their educational experience, the students read the text with a view to discussing and developing a view on the moral, cultural and political themes that were raised, many of which were as relevant in Plato's Athens as they are to us today. In relation to learning about argument, *The Republic* presents a series of arguments that the students could discuss and analyse.

There are a number of parallels between the society of Athens and our own. Athens was a democracy much influenced by public speakers and this mirrors our society where the media have a similarly powerful role. Greece was a collection of city states, a bit like modern Europe, with some in Greece wanting unification. The issue of

European union is a hot one in this country at the moment, particularly in relation to currency union. Education is a central issue in *The Republic* and is one that closely concerned the students who were taking the module as they were the first group to experience the new style of medical education at the University and their views and reactions are being constantly sought. The students were asked to write seminar papers on Plato's discussion of education and on his view of the family.

The study of *The Republic* was set in the context of a series of lectures on social and political philosophy and one of the 'core' themes emphasised by the GMC in *Tomorrow's Doctors* (p.17) is 'Man and Society'. By this the GMC were thinking mainly of human development and sociology and psychology relevant to medicine, as well as ethics. However, by studying *The Republic,* (and hearing about other themes in political philosophy in the lecture course) the medical students were able to consider some of the fundamental reasons why society exists in the first place. Plato deals with the reasons why people live together in communities : humans are frail beings and need the protection of a group, and there is a need to share human resources in the form of the diverse range of talents that people have. Without reference to religious morality, Plato deals with the moral values which, of necessity, must rule human society granted these human needs and vulnerabilities. This approach opened the students minds to a deeper understanding of the origins of our society's make up and of the values which allow it to function.

These issues are all part of our modern social and political agenda and it is important for any educated member of our society to have a view on them. In *The Republic* these issues are raised for the students' consideration in a controversial way as the book takes the form of a series of dialogues between Socrates and the various young men of Athens. This structure encouraged the students to form their own views, as they found themselves agreeing or disagreeing with the protagonists in the dialogue, and enhanced their understanding of the construction of arguments.

We hoped, therefore, that both the content as well as the structure of the teaching of the module would help the students to develop the ability to express their views coherently, constructively and, most of all, with convincing arguments.

(d) Evaluation of the module

Having discussed what happened in the module and what its ambitious aims were, it is important to give an idea of whether the module achieved these aims or not: did we manage to turn the students into philosophers? Evaluation was carried out in two ways, firstly, by a conventional questionnaire, which asked the students about their reasons for taking the module and what they thought of the structure, content and educational value of the module; and secondly, by comparing the two analytical exercises that the students did at the beginning and end of the module, to see how their analytical skills had progressed.

Turning first to the results of the questionnaire (a copy of the evaluation form is in appendix 5.5 and the results are represented in graphical form in appendix 5.6, graphs 1-6.). Most of the students had taken the module because they were keen to do an arts subject again, having missed the opportunity to study the arts since leaving school and nine out of the ten wanted a complete change from medicine (graph 1). We asked the students' views on the fact that we did not set knowledge objectives for the course in the form of a learning contract and they were all in favour of this (graph 2). They did feel, however, that they required more feedback on how they were doing. The students felt stimulated by the discussion in seminars and by the new ideas that were introduced (graph 3). They were keen for more discussion time and more time spent on clarifying issues they did not understand from their reading and lectures. The group seemed to have handled the content of the module well and most felt subjectively that they were better able to analyse argument by the end of the course. Most also said that they would be able to describe the major arguments of *The Republic* to a friend (graph 4).

Turning to the students' views of the educational value of the module for themselves, all had discussed the module with their colleagues indicating that we had achieved an important prerequisite for an educational process - that the students had become interested and engaged in what they were doing (c.f. 5.2). Most of them, indeed, wanted to do more philosophy in the future and had ideas they wished to pursue (graph 5). They were asked specifically about the value of the module in medical educational terms and the most frequent

comment here was that they would now be less inclined to accept things that they were told without justification and that they would be more critical of what they were told (graph 6).

The second part of the evaluation involved a comparison of the first and second analytical exercises as a more objective measure of whether the students had succeeded in learning the skills of analysis. All of the students displayed some improvement over the course of the module and I have provided, in appendix 5.7, the full text of student HM's exercises as an example of their progress.

In summary, then, this module was designed to broaden both the students' education and their views of society and its structures and the process by which it helped them to do this enabled them to learn the techniques of philosophical argument and how to apply it themselves. The initial evaluation would imply that we has succeeded in the short term. A concluding comment made by one of the group about the module was that

'It has opened my mind'.

We hope that they will continue into the rest of their education as doctors with open minds.

5.10 CONCLUSIONS

1) There are problems concerning the nature of the 'humane attitude', and how to teach it.

2) The humane attitude has an ethical component and a broader educational component which provides perspective.

3) Education must be distinguished from training.

4) The ethical component in the humane attitude can be taught via moral philosophy, case studies, keeping a diary, the arts and any combination of these.

5) The 'ethos' of medicine is such that a 'counter culture' is required, supplied by the study of the non-medical subjects which provide the perspective.

6) The GMC has made the study of non-medical subjects possible by insisting on SSMs which may be non-medical.

7) These may require 'expressive objectives' rather than 'performance objectives', for education is a 'process' and not just an 'outcome'.

8) Two such SSMs - in literature and in philosophy - were outlined.

CHAPTER 6
CONCLUSION

The title of my thesis is *Evidence and Judgement,* and I have examined these concepts as they apply to medical research, to clinical practice, and to public health, bearing in mind the Scottish Enlightenment idea that the aim of true science is the discovery of the 'connecting principles of nature'. I then considered how contemporary medical undergraduate courses could be modified in the light of the GMC recommendations so that future doctors would have a more balanced and educated understanding of the role of evidence and judgement in the professional life of doctors.

The concept of evidence, as it is used by scientists, is logically related to that of a hypothesis. Information, data, observations and experiments become 'evidence' when they are for or against a specific hypothesis. Moreover, the hypothesis concerns what is universally or at least generally believed to be the case. The concept of evidence as that is used by detectives or forensically differs in these two respects: the data and observations *suggest* a hypothesis, rather than confirm or disconfirm one, and the hypothesis is about a particular or specific state of affairs rather than one which is more generally the case. The concept of evidence which applies to *medical research* is like that of the scientist, and the concept which applies to *clinical consultations* is like that of the detective. The reason that the detective model of evidence is appropriate for the clinician is that he is dealing with *specific* patients. The relevant evidence for the clinician to establish diagnosis,

prognosis and treatment comes from or applies to *this* particular patient.

The sources of evidence in the clinic are, therefore, of different kinds. One important source is, of course, that obtained via scientific routes, with which a clinician should be familiar from the science elements in his training, from scientific papers, and from the advice of other scientifically minded clinicians. This kind of evidence must be adapted to suit a given patient from a given social environment. A second source of information about the diagnosis will be the patient's own stories or anecdotes. We can say either that anecdotes are not evidence, but rather are an alternative source of relevant information; or we can say that anecdotes are a kind of clinically relevant evidence. They are certainly of importance to the clinician.

In adapting the scientific evidence to the specific patient, and in making sense of the patient's anecdotes, the doctor is involved in the process of interpretation. He may also have insights into the situation which may lie behind the patient's presence in the surgery. Interpretation and insight are describable as forms of understanding. The good doctor must, in addition, be sensitive to the ethical nature of the doctor-patient relationship. Interpretation, insight, and ethical sensitivity are expressed in humane judgement, and 'judgement' is the other major concept of the thesis.

In discussing science it emerged that judgement is also an essential part of the scientist's activities. He must constantly consider whether X

is really an example of Y or supports his conclusion. The same is true of the judgement of the detective. These are technical manifestations of judgement. But, as I have said, judgement is also exercised by the doctor in the clinic as he interprets the patient's symptoms, listens to the anecdotes, decides how far to urge a specific treatment and how far simply to comply with what the patient has heard from a neighbour is a good treatment. This judgement, compounded of technicalities, interpretations, insights and ethics, is obviously partly moral and partly non-moral. It becomes explicitly moral, of course, when it involves joint discussion with the patient to obtain informed consent. This judgement-complex, with the extra strand of rhetoric, is also involved in communicating to the patient the salient features of diagnosis and treatment.

It emerged that evidence and judgement are also involved in public health medicine. The scientific evidence here derives from epidemiology, which might seem an objective, neutral, judgement-free science. But judgement is involved in several ways. First, and most obviously, it is involved in deciding what to do with the findings as a matter of public policy. For example, should there be a 'girls only' policy with respect to the rubella vaccine or a 'girls and boys' policy? The answer to this question involves an amalgam of the technical and the moral/political. Secondly, and less obviously, the decision about which epidemiological studies to undertake in the first place involves the same judgmental mixture of the technical and the moral and political.

I argued that the ability to make judgements of this complex kind derives in part from the possession of what I called a 'humane' attitude. This attitude is partly a moral attitude but involves another element, an element which comes from being broadly educated as distinct from narrowly trained.

The final chapter of the thesis was concerned with how, if at all, the medical curriculum can be widened to aid the development of the humane attitude, or how medical training can become truly medical education. I suggested that Special Study Modules could help here, with the blessing of the GMC. I concluded with an account of two such SSMs, one of which, in philosophy, has already been piloted at Glasgow through the co-operation of the Departments of Philosophy and General Practice. It is through this kind of co-operation, in a University setting, that the broad educational aspects of the medical curriculum can be realised. This will result in the creation of 'the good doctor', in whom evidence is tempered with humane judgement.

REFERENCES FOR INTRODUCTION

[1] General Medical Council. Tomorrow's Doctors: recommendations on undergraduate medical education. London: GMC, 1993.

REFERENCES FOR CHAPTER 1

[2] Wittgenstein L. *Philosophical Investigations.* Oxford: Blackwell, 1953. para. 66-67.

[3] Smellie William. *The Philosophy of Natural History.* Edinburgh, 1790, vol. 1, ch. 1, pp. 1-14; collected in A. Broadie (ed.), *The Scottish Enlightenment: An Anthology.* Edinburgh: Canongate Classics, 1997. pp. 761-770.

[4] Hooke Robert. 'Meteorology', collected in Norman Davey, *British Scientific Literature in the Seventeenth Century.* London: Harrap, 1953. pp. 110-114.

[5] Crombie AC. 'Newton's Conception of Scientific Method'. *Bulletin of the Institute of Physics.* 1957, pp. 350-62.

[6] Smellie op. cit.

[7] Gallileo. *The Assayer.* Rome, 1623. Trans. by Stillman Drake, New York: Doubleday, 1957. pp. 237-38.

[8] Lerner L ed. *Evidence and Inference.* Illinois: the Free Press of Glencoe, 1959. p. 13.

[9] Hempel C. Studies in the Logic of Confirmation in Achinstein P. ed. *The Concept of Evidence.* Oxford: Oxford University Press, 1983. p.12.

[10] Conan Doyle A. *A Study in Scarlet and the Sign of Four.* London: Elder and Co., 1903. p. 39.

[11] Hempel op. cit. p. 14.

[12] Lerner op. cit. p. 13.

[13] Koestler A. *Insight and Outlook.* London : Macmillan and Co. Ltd., 1949. p. 252.

[14] Bacon Francis. *Advancement of Learning* (1605). ed., by J. Devey, London: Bell, 1872, Bk. I.

[15] Bacon Francis. *Novum Organum* (1620). ed, by J Devey, London: Bell, 1872, I, 1.

[16] Bacon Francis 1620 op. cit. 1, 129.

[17] Bacon Francis 1620 op. cit. 1, 124.

[18] Galileo. *Dialogue Concerning the Two Chief World Systems* (1623). Trans. by Stillman Drake, Los Angeles: University of California Press, 1962. p. 34.

[19] Galileo. *Letter to the Grand Duchess* (1615). Trans. by Stillman Drake, New York: Doubleday, 1957.

[20] Blake William. 'Jerusalem'. in *The New Oxford Book of English Verse* ed. H. Gardner. Oxford: Oxford University Press, 1972. p.486.

[21] Snow CP. *The Two Cultures.* (with introduction by Stephan Collini) Cambridge: Cambridge University Press, 1993.

[22] Snow op. cit. pp. 14-15.

[23] Smith Adam. *History of Astronomy* (1740-46). Collected in A. Broadie, *The Scottish Enlightenment.* Edinburgh: Canongate Classics, 1997. pp. 735-49.

[24] Smith op. cit. p. 735.

[25] Smith op. cit. p. 747.

[26] Smith op. cit. p. 747.

[27] Hume David. *A Treatise of Human Nature* (1738) 1, IV, II, London: Dent, 1911.

[28] Smith Adam. *History of Astronomy* (1740-46) WPD Wightman and JC Bryce (eds.) Essays on Philosophical Subjects Oxford: Oxford University Press, 1980. IV, 13.

[29] Smith op. cit. (Wightman and Bryce eds.) IV, 35.

[30] Galileo (1623) op. cit. p. 328.

[31] Editor's choice. *BMJ* 1995;l311 And following series of articles.

[32] Britten N, Jones R, Murphy E, Stacey R. Qualitative research methods in general practice and primary care. *Family Practice* 1995; 12: 104-114.

[33] Sylvester S. General practitioners' attitudes to professional reacreditation. *BMJ* 1993; 307: 912-14.

[34] Kinmonth A. Understanding and meaning in research and practice. *Family Practice* 1995; 12: 1-2.

[35] Law SAT, Britten N. Factors that influence the patient-centredness of a consultation. *BJGP* 1995; 45:520-24.

[36] Winefield HR, Murrell TG, Clifford J. Process and outcomes in general practice consultations: problems in defining high quality care. *Social Science and Medicine* 1995; 41: 969-75.

[37] Mays N, Pope C. Rigour and qualitative research. *BMJ* 1995; 311: 109-12.

[38] Nagel E. Measurement. in Danto A, Morgenbesser S. eds. *Philosophy of Science.* Cleveland: Meridian books, 1960 p. 121.

[39] Cohen MR, Nagel E. *An Introduction to Logic and Scientific Method.* London: Routledge and Kegan Paul Ltd., 1934 p. 294.

[40] Cohen and Nagel op. cit. p. 295.

[41] Feigl H, Brodbeck M. eds. *Readings in the Philosophy of Science.* New York: Appleton-Century-Crofts, Inc., 1953 p. 477ff.

[42] McKinstry B, Wang J. Putting on the style: what patients think of the way their doctor dresses. *BJGP* 1991; 41:275-78.

[43] Likert R. A technique for the measurement of attitudes. *Archives of Psychology* 1932; 140: 1-55.

[44] Peacock JL, Bland JM, Anderson HR. Pretem delivery: effects of socioeconomic factors, psychological stress, alcohol and caffeine. *BMJ* 1995; 311: 531-35.

[45] Cohen and Nagel op. cit. p. 294.

[46] Winefield et. al.. op. cit.

[47] Feigl and Brodbeck op. cit. p. 478.

[48] Britten et. al. op. cit.

[49] Law and Britten op. cit.

[50] Henbest RJ. Stewart MA. Patient-centredness in the consultation. 1: a method for measurement. *Family Practice* 1989; 6: 249-253.

[51] Sartre J-P. *Being and Nothingness* (1943) trans. by Hazel E Barnes. London: Methuen, 1969. pp. 259-263.

[52] Lyon B. Organisations. In: Heap S, Hollis M. et al. *The Theory of Choice: a critical appraisal.* Oxford: Blackwell, 1994. pp. 167-68.

[53] Bacon (1620) op. cit. 1, LXXIII and 1, CXXIV.

REFERENCES FOR CHAPTER 2

[54] Byrne PS, Long BFL. *Doctors Talking to Patients.* London: HMSO, 1976.

[55] Balint M. *The Doctor, his Patient and the Illness.* London: Tavistock Publications, 1957.

[56] Neighbour R. *The Inner Consultation.* Lancaster: MTP Press, 1987.

[57] Pendleton D, Scofield T, Tate P, Havelock P. *The Consultation : an approach to learning and teaching.* Oxford: Oxford University Press, 1987.

[58] Macnaughton RJ. Anecdotes and Empiricism. *British Journal of General Practice* 1995; 45: 571-72.

[59] Beard K, Bulpitt L, Macie-Taylor H, et al. Management of Elderly Patients with Hypertension. *BMJ* 1992; 304: 412-16.

[60] Johnstone AH, Hogg WR, Ziane M. A working memory model applied to physics problem solving. *International Journal of Science Education* 1993; 15: 663-72.

[61] Van der Vleuten CPM, Newble DI. How can we test clinical reasoning? *Lancet* 1995; 345: 1032-34.

[62] Black JM, Norman GR, Kinsey E, Smith M. Report card from McMaster: student evaluation at a problem-based medical school. *Lancet* 1995; 345: 899-902.

[63] Pendleton D. Professional development in general practice: problems, puzzles and paradigms. *BJGP* 1995; 45: 377-81.

[64] Pickup AJ, Mee LJ, Hedley AJ. The general practitioner in continuing education. *Journal of the Royal College of General Practitioners* 1983; 33: 486-90.

[65] Sackett DL, Haynes RB, Guyatt GH, et. al. *Clinical Epidemiology.* New York: Little Brown, 1993.

[66] Schmidt HG, Norman GR, Boshuizen HPA. A cognitive perspective on medial expertise: theory and implications. *Academic Medicine* 1990; 65: 611-21.

[67] Department of Health. New advice on oral contraception. London: HM Stationery Office, 1995.

[68] Charlton B. Medical practice and the double-blind randomised controlled trial. *BJGP* 1991; 41: 355-56.

[69] Hope T. Evidence based medicine and ethics. *Journal of Medical Ethics* 1995; 21: 259-60.

[70] Feinstein AR. The need for humanised science in evaluating medication. *Lancet* 1972; ii: 421-23.

[71] Montgomery Hunter K. *Doctors' stories: the narrative structure of medical knowledge.* Princeton: Princeton University Press, 1991 p.45.

[72] Aristotle. *The Nicomachean Ethics.* Trans. D. Ross. Oxford: Oxford University Press, 1980. 1140a20.

[73] Plato. *Republic*. Trans. D Lee. Harmondsworth: Penguin, 1983. 332c.

[74] Aristotle op. cit. 1140b6.

[75] Charlton B. 1991, op. cit.

[76] Sullivan FM, Macnaughton RJ. Evidence in consultations: interpreted and individualised. *Lancet* 1996; 348: 941-43.

[77] *The Times* October 4 1997, p25.

[78] O'Donnell M. Trial by anecdote. *BMJ* 1991; 302: 56-57.

[79] Brody H. *Stories of Sickness.* New Haven and London: Yale University Press, 1987.

[80] Montgomery Hunter K. op. cit.

[81] Montgomery Hunter op. cit. p. 74.

[82] Gille A. The James Mackenzie Lecture : James Mackenzie and General Practice today. *Practitioner* 1962; 188: 94-107.

[83] Mann RD. Breast implants: the tyranny of the anecdote. *Journal of Clinical Epidemiology* 1995; 48: 504-506.

[84] Downie RS. Literature and medicine. *Journal of Medical Ethics* 1991; 17: 93-96, 98.

[85] Hoeg Peter. *Miss Smilla's Feeling for Snow.* London: Flamingo, 1994. pp. 36-7.

[86] Eliot George. *Middlemarch.* London: 1871.

[87] Mueller-Vollmer K. ed. *The Hermeneutics Reader.* Oxford: Basil Blackwell Ltd., 1985. p.7.

[88]. Mueller-Vollmer op. cit. p. 66-67.

[89] Mueller-Vollmer op. cit. p. 66.

[90] Hopkins GM. 'Felix Randal' in NH MacKenzie ed. *Poems by Gerard Manley Hopkins.* London: The Folio Society, 1974. p.92.

[91] Mueller-Vollmer op. cit. p. 12.

[92] Paris JJ, Shreiber MD, Statter M et al. Sounding Board. *New England Journal of Medicine* 1993; 329 (5): 354-57.

[93] Veatch RM, Spicer CM. Medically futile care: the role of the physician in setting limits. *American Journal of Law and Medicine* 1992; 18: 15-36.

[94] *Re* J. (a minor). 4 *All England Reports,* 614. For discussion see 'British Judges cannot order doctors to treat'. Hastings Centre Report 1992: 22 (4), 3-4.

[95] *Re* J. op. cit.

[96] Paris et. al. op. cit.

REFERENCES FOR CHAPTER 3

[97] Gregory John. *Lectures on the Duties and Qualifications of a Physician* (1772). Lecture 1. Collected in Broadie op. cit. pp. 751-60.

[98] Gregory op. cit. p. 753.

[99] Gregory op. cit. p. 755.

[100] Ryle Gilbert. *The Concept of Mind.* London: Hutchinson, 1949. pp. 51-60.

[101] cf. Aristotle, *Metaphysics.* 1003a21 - b19.

[102] Campbell George. *The Philosophy of Rhetoric.* Edinburgh, 1808. Collected in Broadie op. cit. pp. 686-694.

[103] Gregory (collected in Broadie) op. cit. p. 753.

[104] Gregory op. cit. p. 757.

[105] Gregory op. cit. p. 758.

[106] Gregory op. cit. pp. 754-60.

[107] Gregory op. cit. p. 752.

[108] Smith R. Medicine's core values. *BMJ* 1994; 309: 1247-1248.

[109] *Core values for the medical profession in the 21st century: report of conference held on 3/4 November 1994.* London: BMA, 1995

[110] *The Patients' Charter.* London: HMSO.

[111] General Medical Council. *Tomorrow's Doctors: recommendations on undergraduate medical education.* London: GMC, 1993.

[112] Glasgow University Faculty of Medicine: Proposals for a new undergraduate curriculum 1996 (unpublished).

[113] Davidoff F, Haynes B, Sackett D, Smith R. Evidence-based medicine. *BMJ* 1995; 310: 1085-6.

[114] Downie RS, Charlton B. *The Making of a Doctor.* Oxford: Oxford University Press, 1992.

[115] Youngston AJ. Medical education in the later 19th century: the science take-over. *Medical Education* 1989; 23: 480-491.

[116] McCormick JS. *The Doctor: father figure or plumber.* London: Croom Helm, 1979.

[117] Top Tory Drugs Disgrace. Leader in *Pulse* 1995: 55; 1.

[118] GMSC Out of Hours Ballot of all GP Principles, June 1995.

[119] Smith op. cit.

[120] Beveridge WIB. *The Art of Scientific Investigation.* London: William Heinemann Ltd., 1950. p. 54.

[121] Koestler A. *Insight and Outlook: an inquiry into the common foundations of science, art and social ethics.* London: Macmillan, 1949 p. 254.

[122] Beveridge op. cit. quoting AR Wallace p. 69.

[123] This account of Gestalt theory is taken largely from Humphrey G. *Thinking: an Introduction to its Experimental Psychology.* London: Methuen, 1951 Ch. vi pp. 150-184.

[124] Kohler and Koffka were part of the original Gestalt school of psychology founded in 1910. This example is quoted in Humphrey op. cit. p. 155-56.

[125] Humphrey op. cit. p. 173.

[126] Koestler A. op. cit. pp. 36-7.

[127] Humphrey op. cit. p. 7.

[128] Koestler op. cit.. p. 37.

[129] Martin GD. *Language, Truth and Poetry.* Edinburgh : Edinburgh University Press, 1975 p. 151.

[130] Koestler op. cit. pp. 245 and 24.

[131] Koestler op. cit. ch. 23.

[132] Shakespeare William *The Sonnets.* ed. W. Burto. London : Signer Classics, 1964 p. 73.

[133] Koestler op. cit. pp. 245-265.

REFERENCES FOR CHAPTER 4

[134] World Health Organisation (WHO). *Constitution* New York: WHO, 1946.

[135] Acheson Report. Public Health in England. Report of the Committee of Inquiry into the future development of their public health function. London: HMSO, 1988.

[136] Shy C. The failure of academic epidemiology: witness for the prosecution. *American Journal of Epidemiology* 1997; 145: 479-84.

[137] Calman KC, Downie RS. Public Health Ethics in *The Oxford Textbook of Public Health.* Oxford: Oxford University Press, 1996.

[138] Whitehead M. *The Concepts and Principles of Equity and Health .* WHO European Regional Office, 1990.

[139] Omenn GS. Prevention and the elderly : what are the appropriate policies? *Health Affairs* 1990; 9: 80-93.

[140] Charlton B. Public health medicine - a different kind of ethics? *Journal of the Royal Society of Medicine* 1993; 86: 194-95.

[141] Kelly MP, Charlton B. Health promotion : time for a new philosophy? *BJGP* 1992; 42: 223-24.

[142] Blaney R. Why Prevent Disease? in : *Ethical Dilemmas in Health Promotion* S Dioxiadis ed. Chichester: John Wiley, 1987.

[143] Report of the working party on fluoridation of water and cancer : a review of the epidemiological evidence. London: HMSO, 1985.

[144] Knox EG. Personal and public health care: conflict, congruence or accommodation? in *Ethical Dilemmas in Health Promotion* ed. S Dioxiadis. Chichester: John Wiley, 1987.

[145] Knox op. cit.

[146] Stone S, Stewart S. *Towards a screening strategy for Scotland*. Scottish Forum for Public Health Medicine, Glasgow, 1994.

[147] Shickle D, Shandwick R. The ethics of screening : is 'screeningitis' an incurable disease? *Journal of Medical Ethics* 1994; 20: 12-18.

[148] World Health Organisation (WHO) *Constitution* New York: WHO, 1946.

[149] Downie RS, Tannahill C, Tannahill A. *Health Promotion : Models and Values* 2nd ed. Oxford: Oxford University Press, 1996.

[150] Boyd KM. Health Care Ethics, Health and Disease. In R Gillon (ed.) *Principles of Health Care Ethics*. Chichester: Wiley, 1994. pp. 807-817

[151] Williams G. Health Promotion - caring concern or slick salesmanship? *Journal of Medical Ethics* 1984; 10: 191-95.

[152] Walters L. Ethical issues in the prevention and treatment of HIV infection and AIDS. *Science* 1988; 239: 597-603.

[153] WHO 1946 op. cit.

[154] Pinet G. Health legislation, prevention and ethics. In *Ethical Dilemmas in Health Promotion* ed. S Dioxiadis. Chichester: John Wiley, 1987.

[155] WHO. Health promotion : a discussion document on the concepts and principles. Copenhagen: WHO, 1984.

[156] Acheson Report op. cit.

[157] WHO, 1984 op. cit.

[158] Smith R. Rationing health care: moving the debate forward. *BMJ* 1996; 312: 1311-12.

[159] Lenaghan J, New B, Mitchell E. Setting priorities: is there a role for citizens' juries? *BMJ* 1996; 312: 1553-4.

[160] Beauchamp D. Lifestyle, public health and paternalism in *Ethical Dilemmas in Health Promotion* ed. S Dioxiadis Chichester: John Wiley, 1987. p. 72.

[161] Hecht R. ed. *I Talk Now*. Bristol Specialist Health Promotion Service, Central Health Clinic, Bristol, 1996.

[162] Bromley by Bow Centre Annual Report 1995-6. London: Bromley By Bow, 1996.

REFERENCES FOR CHAPTER 5

[163] Peters RS. *Ethics and Education*. London: George Allen and Unwin Ltd, 1966.

[164] Peters RS (ed.) *The Concept of Education*. London: Routledge & Kegan Paul, 1967.

[165] Peters 1966 op cit. p. 34.

[166] Downie RS, Charlton B. *The Making of a Doctor*. Oxford: Oxford University Press, 1992. p. 54.

[167] Peters 1966 op. cit. p. 31.

[168] Peters 1966 op. cit. p. 25.

[169] Peters 1966 op. cit. p. 37.

[170] Peters 1967 op. cit. p. 8.

[171] Peters 1967 op. cit. p. 8.

[172] Downie and Charlton op cit. p. 54.

[173] Downie and Charlton op. cit. pp. 54-57.

[174] General Medical Council. *Tomorrow's Doctors : recommendations on undergraduate medical education*. London; GMC, 1993. p. 15.

[175] Boyd KM (ed.) *Report of a Working Party on the Teaching of Medical Ethics* (Chairman, Sit Desmond Pond). London: Institute of Medical Ethics Pub. Ltd., 1987.

[176] Boyd KM. Teaching medical ethics to medical students and GP trainees. *Journal of Medical Ethics* 1987; 13: 132-33.

[177] Gillon R. Thinking about a medical school core curriculum for medical ethics and law. *Journal of Medical Ethics* 1996; 22: 323-24.

[178] Hope T. Ethics and law for medical students : the core curriculum. *Journal of Medical Ethics* 1998; 24: 147-48.

[179] Consensus statement by teachers of medical ethics and law in UK medical schools. Teaching medical ethics and law within medical education : a model for the UK core curriculum. *Journal of Medical Ethics* 1998; 24: 188-192.

[180] Coope CM. Teaching medical ethics: does teaching by cases mislead us about morality? *Journal of Medical Ethics* 1996; 22: 46-52.

[181] Gillon R. Case studies and medical education. *Journal of Medical Ethics* 1996; 22: 2-4.

[182] Downie RS. *The Healing Arts : an illustrated Oxford anthology.* Oxford: Oxford University Press 1994. p. xvi.

[183] Downie 1994 op. cit. p. xvi.

[184] Macnaughton RJ. Anecdotes and empiricism. *BJGP* 1995; 45: 571-72.

[185] Downie 1994 op. cit. p. 288.

[186] Downie and Charlton op. cit. pp. 57-63.

[187] Charlton B Holistic medicine or the humane doctor? *BJGP* 1993; 43: 475-77.

[188] GMC op. cit.

[189] Fields SA, Toffler WL. Hopes and concerns of a first year medical class. *Medical Education* 1988; 22: 488-491.

[190] Boreham NC. The dangerous practice of thinking. *Medical Education* 1994; 28: 172-179.

[191] Calman KC, Downie RS. Education and training in medicine. *Medical Education* 1988; 22: 488-491.

[192] Mill JS. On Liberty (1859) In Warnock M. ed. *Utilitarianism.* Glasgow: Collins, 1962. p. 188.

[193] Weatherall DJ. The inhumanity of medicine. *BMJ* 1994; 309: 1671-72.

[194] Welsh Irvine. *Trainspotting.* London: Martin, Secker and Warburg, 1993.

[195] Anderson J. Core plus options or special study modules: where do we stand? *Medical Education* 1994; 28: 470-73.

[196] GMC op. cit. p. 10.

[197] Romisowski AJ. *Designing Instructional Systems.* London: Kogan Page, 1981.

[198] Downie RS, Hendry RA, Macnaughton RJ, Smith BH. Humanising medicine: a special study module. *Medical Education* 1997; 31: 276-80.

[199] Stenhouse L. *An Introduction to Curriculum Research and Development.* London: Heinemann, 1975.

[200] Macdonald-Ross M. Behavioural objectives: a critical review. in *Instructional Science 2*, 1-52. Amsterdam: Elservier Scientific Publishing Co., 1973.

[201] Eisner D. Instructional and Expressive Objectives, in M Golby, J Greenwald, R West (eds.) *Curriculum Design* London: Croom Helm, 1969.

[202] Stenhouse op. cit.

[203] Laurillard D. *Rethinking University Teaching.* London: Routledge, 1993.

[204] Pask G. Conversational techniques in the study and practice of education. *British Journal of Psychology* 1976; 46: 12-25.

[205] Emmet D *Function, Purpose and Powers.* London: Macmillan, 1958.

[206] Calman KC, Downie RS, et al, Literature and medicine: a short course for medical students. *Medical Education* 1988; 22: 265-69.

[207] Moore AR. Medical humanities - a new medical adventure. *New England Journal of Medicine* 1976; 293: 1479-80.

[208] Weatherall op. cit.

[209] Osler W. *The Old Humanities and the New Science.* Boston: Houghton Mifflin, 1920. p. 26

[210] Broadie op. cit. (Introduction) quoting Kant, p. 1.

SELECT BIBLIOGRAPHY

Aristotle. *The Nicomachean Ethics*. Trans. D Ross. Oxford: Oxford University Press, World's Classics, 1980.

Balint M. *The Doctor, his Patient and the Illness.* London: Tavistock Publications, 1957.

Beveridge WIB. *The Art of Scientific Investigation.* London: William Heinemann Ltd., 1950.

Boyd KM. Report of a Working Party on the Teaching of Medical Students. (Chairman: Sir Desmond Pond). London: Institute of Medical Ethics Pub. Ltd., London, 1987.

Boyd KM. Teaching Medical Ethics to Medical Students and GP Trainees. *Journal of Medical Ethics* 1987; 13: 132-22.

Boyd KM. Health Care Ethics, Heath and Disease. In R. Gillon (ed.) *Principles of Health Care Ethics.* Chichester: Wiley, 1994.

Boyd KM. What can medical ethics learn from history? *Journal of Medical Ethics* 1995; 21: 197-98.

Broadie A. (ed.) *The Scottish Enlightenment : An Anthology.* Edinburgh: Canongate Classics, 1997.

Brody H. *Stories of Sickness.* New Haven and London: Yale University Press, 1987.

Calman KC, Downie RS. Public Health and Ethics in J. McEwen, GS Omenn et. al. (eds.) *The Oxford Textbook of Public Health* vol. 1. 4th ed. Oxford: Oxford University Press, 1996.

Charlton B. Medical practice and the double-blind randomised controlled trial. *BJGP* 1991; 41: 355-56.

Charlton B. Holistic medicine or the humane doctor? *BJGP* 1993; 43: 475-77.

Cohen MR, Nagel E. *An Introduction to Logic and Scientific Method.* London: Routledge and Kegan Paul Ltd., 1934.

Crombie AC. Newton's Conception of Scientific Method. *Bulletin of the Institute of Physics* 1957 pp. 350-362.

Downie RS, Charlton B. *The Making of a Doctor: medical education in theory and practice.* Oxford: Oxford University Press, 1992.

Downie RS. *The Healing Arts: an illustrated Oxford anthology.* Oxford: Oxford University Press, 1994.

Downie RS. Tannahill C, Tannahill A. *Health Promotion : Models and Values.* 2nd ed. Oxford: Oxford University Press, 1996.

Doxiadis S. (ed.) *Ethical Dilemmas in Health Promotion.* Chichester: John Wiley, 1987.

Feigl H, Brodbeck M. (eds.) *Readings in the Philosophy of Science.* New York: Appleton-Century-Crofts, Inc., 1953.

General Medical Council. *Tomorrow's Doctors : recommendations on undergraduate medical education.* London: GMC, 1993.

Hall AR. *The Scientific Revolution.* London: Longmans, Green and Co. Ltd., 1954.

Hempel C. Studies in the Logic of Confirmation in P. Achinson (ed.) *The Concept of Evidence.* Oxford: Oxford University Press, 1983.

Hooke Robert. Meteorology. Collected in Norman Davey, *British Scientific Literature in the Seventeenth Century.* London: Harrap, 1953.

Hope T. Evidence-based medicine and ethics. *Journal of Medical Ethics* 1995; 21: 259-60.

Humphrey G. *Thinking : an Introduction to its Experimental Psychology.* London: Methuen, 1951.

Koestler Arthur. *Insight and Outlook.* London: Macmillan and Co. Ltd., 1949.

Lerner L. (ed.) *Evidence and Inference.* Illinois: the Free Press of Glencoe, 1959.

Little M. *Humane Medicine.* Cambridge: Cambridge University Press, 1995.

McCormick JS. *The Doctor: Father Figure or Plumber.* London: Croom Helm, 1979.

Martin GD. *Language, Truth and Poetry.* Edinburgh: Edinburgh University Press, 1975.

Montgomery Hunter K. *Doctors' Stories : the narrative structure of medical knowledge.* Princeton: Princeton University Press, 1991.

Mueller-Vollmer K. (ed.) *The Hermeneutics Reader.* Oxford: Basil Blackwell Ltd., 1985.

Nagel E. Measurement. In A Danto, S Morgenbesser (eds.) *Philosophy of Science.* Cleveland: Meridian Books, 1960.

Pendleton D, Schofield T, Tate P, Havelock P. *The Consultation : an approach to learning and teaching.* Oxford: Oxford University Press, 1987.

Peters RS. *Ethics and Education.* London: George Allen and Unwin Ltd., 1966.

Peters RS. (ed.) *The Concept of Education*. London: Routlegde and Kegan Paul, 1967.

Plato. *The Republic*. Trans. D Lee. Harmondsworth: Penguin, 1983.

Smith BH. Literature in our medical schools. *BJGP* 1998; 48: 1337-40.

Weatherall D. The inhumanity of medicine. *BMJ* 1994; 309: 1671-72.

Weatherall D. *Science and the Quiet Art*. Oxford: Oxford University Press, 1995.

Appendices for Chapter 2

(With thanks to Professor Frank Sullivan)

Appendix 2.1

Feedback loop
Long-term memory
Storage
Sometimes branched
Sometimes as separate fragments
Storing
Working space
Interpretation
Rearrangement
Comparison
Storage
Preparation
Retrieving
Solutions proposed
Perception filter
Undergraduate studies
Direct and indirect experience
Scientific evidence
Wider literature
Information sources
History
Examination

Panel 1: **Mrs McKay's illness script**

Enabling conditions	→	Predisposing factors, boundary conditions, hereditary factors
Predisposing factors	→	Host factors, travel, drug therapy, medical history, previous surgical procedures, environmental conditions
Boundary conditions	→	Age, sex
Fault	→	Invasion of tissue by pathogenic organism, inadequate nutrient supply
Consequences	→	Complaints, signs, symptoms
Complaints	→	Dizziness
Signs	→	High blood pressure

Panel 2: **Sources of evidence used during consultations**

	Undergraduate studies	Experience	Scientific evidence	Wider literature
Discover reason for patient's attendance	++	+++	+	++
Define clinical problem(s)	++	+++	+++	+
Address patient's concerns	++	+++	+++	++
Explain diagnosis to patient	+	+++	+	+++
Make effective use of consultation	+	+++	+++	+++

Appendices for Chapter 5

Appendix 5.1 Outline of the Module

Week One	Plenary week	'Expert' lectures and workshops
Week 2 / Week 3	Small groups Individual work	Reading Small groups Working to assignments
Week 4 Days 1-4	Small groups Individual Work	Finishing assignments
Week 4 Day 5	Plenary	Reading Assignments Assessment Evaluation

Appendix 5.2 Sample Bibliography

Anthologies

Downie, R.S. (ed) (1994) *The Healing Arts* : An Oxford Illustrated Anthology. Oxford: Oxford University Press

Enright, D.J. (ed) (1989) *The Faber Book of Fevers and Frets.* London : Faber and Faber

Porter, Roy (ed) (1991) *The Faber Book of Madness.* London: Faber and Faber

Lowbery, Edward (ed) (1990) *Apollo : an Anthology of poems by doctor poets.* London: The Keynes Press

Illness, Disease, Disability and Madness

Sontag, Susan (1979) *Illness as Metaphor.* Harmondsworth: Penguin Books

Holub, Miraslav (1990) *Vanishing Lung Syndrome.* London: Faber and Faber

Ibsen, Henrik (1882) *Ghosts in Plays:* One (1980). London: Methuen

Hogg, James (1824) *The Private Confessions of a Justified Sinner.* Harmondsworth: Penguin Classics

The Doctor

Berger, John and Mohr, Jean (1967) *A Fortunate Man.* Harmondsworth: Penguin Classics

Eliot, T.S. (1950) *The Cocktail Party.* London: Faber and Faber

Chekhov, Anton (1892) *Ward 6* from *Lady with Lapdog and other Stories.* Harmondsworth: Penguin Classics

Shelley, Mary (1831) *Frankenstein.* London: OUP (1969).

Patients

Larkin, Philip (1882)	'Ambulances', 'The Building' from Collected Poems London: Faber and Faber
Lamb, Charles (1820)	'The Convalescent' from *The Essays of Elia* . London: Dent
Woolf, Virginia (1925)	*Mrs Dalloway*
Galloway, Janice (1989)	*The Trick is to Keep Breathing.* London: Minerva

Death, Dying and Bereavement

Dunn, Douglas (1985)	*Elegies.* London: Faber and Faber
Tolstoy, Leo (1879)	*The Death of Ivan Ilyich* . Harmondsworth: Penguin
Lewis, C.S. (1961)	*A Grief Observed.* London: Faber and Faber
de Beauvoir, Simone (1964)	*A Very Easy Death* Harmondsworth: Penguin
Solzhenitzyn, Alexander	*Cancer Ward.* Harmondsworth: Penguin (1971)

Ethics

Ibsen, Henrik (1879)	*A Doll's House* from *Plays Two.* London: Methuen
Buber, Martin (1922)	*I and Thou.* (trans. by W. Kaufmann) New York
Twain, Mark (1884)	*Huckleberry Finn*

Appendix 5.3

ANALYTICAL EXERCISE 1

DUTY AND ENJOYMENT

Identify and evaluate the arguments in the following passages. Which position is morally more praiseworthy and why? (Do not exceed 1000 words)

John and Mary each spend an evening a week as a voluntary helper in a hostel for down and outs. They work the same hours and do equal amounts of useful work. When asked why they spend some of their time in this way, they replied as follows:

JOHN

Not for the fun of it I can tell you! Attending to the needs of a dirty, quarrelsome and occasionally violent crowd of down and outs is not my idea of a good time. There are plenty of things in life I enjoy doing, and sometimes it's a real grind to drag myself away from other things and go down the hostel for my evenings stint - I'm afraid I'm not one of those people who go all sentimental about the needy and 'just love' helping them. At the same time I recognise that something has to be done for these down and outs, and that, having on the whole a pretty comfortable life, I ought to do something to help those less fortunate than me. It's a matter of conscience with me. I just can't accept that I'm free to ignore the needs of other people. Call it a duty, if you like - the word is a bit old-fashioned but I can't think of a better one: I just think I have a duty to do something for those worse off, so I work at the hostel. Sometimes I almost wish I didn't have this damned sense of duty - life would be so much more comfortable if I didn't; but I'm stuck with it, and I couldn't rest and would feel guilty if I didn't do what I felt I ought to do.

MARY

Originally I started working at the hostel because of John, who's my boyfriend - I was daft about him at the time and thought it would help me to keep him if I showed an interest in this voluntary work kick of his. But now - honestly the real reason I carry on working at the hostel is that I enjoy it so much. The people you meet are so interesting, it's like reading a novel, hearing all their stories of how they got to down and outs. And we all have such laughs together - you'd never believe they could have such a sense of humour. And I just love to see the gratitude in their faces when you've made them feel wanted and cared for - one old lady was in tears of happiness when I mended her skirt for her, and then I stared crying too, out of a sort of love for her, really - you know what I mean? I was thinking of my old granny - and we both crying and smiling together, and I felt so nice and happy inside. I get really high on the whole experience down at the hostel - it's so satisfying to help others like this - I honestly get more pleasure from my stint at the hostel than from anything else I do - I look forward to it all week. And it's so fulfilling, I feel I'm doing what really suits, what will make me really happy in life, and it has made me decide to take up this sort of social work as a career.

Appendix 5.4

ANALYTICAL EXERCISE 2

LIES

Identify and evaluate the arguments in the following passages. Which position is morally more praiseworthy and why? (Do not exceed 1000 words)

FRANK

Telling lies is wrong in itself. It's an abuse of the gift of speech - telling lies can hardly be the purpose of speech, can it? It's one of those things that people in all times and places have held to be wrong, and it's easy to see why they've condemned it: if everyone went around telling lies, society would break down. Obviously, then, you mustn't lie. Lies poison relationships between people, and every lie pushes us further down the slippery slope to total distrust and isolation. It's all very well to say, "Tell a lie if the consequences justify doing so", but you can never know the consequences your acts will have. You wouldn't like to be lied to, would you? - well, then, don't tell lies yourself. We need to know the truth - how otherwise can we live our lives as free and responsible people? To be lied to is really to have your freedom denied and your human dignity affronted - we have a right to be told the truth.

ANN

Telling the truth may often be right and desirable, but people can make a silly fetish of it. Someone whose conscience would never let them tell a lie is in the grip of a silly obsession like people who can't bring themselves to step on cracks in the pavement - they need to see reason. Lies are often harmless - what harm does it do to tell someone you liked their performance in a play, even if you thought they were awful? - and often beneficial, even necessary; a doctor may know it would utterly crush someone to know the truth, and if we tell a thug were his intended victim is, we're indirectly responsible for the victim's smashed-in face. If other people are profiting by lying - say, getting welfare benefits by giving false information - you're simply denying yourself your share if you don't lie too, and that's silly. Anyway, truth isn't always attainable and may not even exist. People see the world in different ways, truth can be a subjective thing, it can be sheer tyranny to insist that your vision is the truth and someone else's is false.

Appendix 5.5

Student Evaluation Form

Philosophy SSM : Evaluation

This is the first time we have run this course so we are very interested in your views. Please express you views as honestly as possible so that we can develop and improve the module for the future.

Please ring choices or delete as appropriate

Module Choice

These are the reasons members of the group gave for choosing this module. Please tick all that apply to you and add any others I have not included.

Previous experience and interest in philosophy ☐

Wanted complete change from studying medicine ☐

Wanted different perspective on medicine/society ☐

Had missed the opportunity to study an arts subject ☐

Wanted to grasp a rare opportunity to study philosophy ☐

Other ☐

Module structure and teaching methods

I was clear from the start about what I was expected to do.

Strongly agree agree neutrai disagree strongly disagree

This module differed from your medical studies in that we used a mixture of seminars and lectures.

I felt comfortable with this mode of course delivery

Strongly agree agree neutral disagree strongly disagree

Please delete

There was too much/sufficient/not enough time spent in seminars and lectures

There was too much/sufficient/too little written work

My time was too heavily/sufficiently/to little occupied with module work

Seminars

The seminars clarified points of misunderstanding from my reading and the lectures.

Strongly agree agree neutral disagree strongly disagree

I had the opportunity to express my ideas in the seminars

Strongly agree agree neutral disagree strongly disagree

The tutors dominated the seminars.

Strongly agree agree neutral disagree strongly disagree

I felt stimulated by the introduction of new ideas.

Strongly agree agree neutral disagree strongly disagree

My own views were challenged.

Strongly agree agree neutral disagree strongly disagree

Comments

Module content

I now have a better grasp of how arguments are constructed.

Strongly agree agree neutral disagree strongly disagree

I am now better able to analyse arguments.

Strongly agree agree neutral disagree strongly disagree

I am familiar with the major arguments in The Republic.

Strongly agree agree neutral disagree strongly disagree

I would be able to describe these arguments to a friend.

Strongly agree agree neutral disagree strongly disagree

General Points

My interest in philosophy has been further stimulated by this module.

Strongly agree agree neutral disagree strongly disagree

I discussed the module with other students.

Strongly agree agree neutral disagree strongly disagree

This module has introduced ideas that I wish to develop further.

Strongly agree agree neutral disagree strongly disagree

I was aware that I was in a different learning environment from medicine.

Strongly agree agree neutral disagree strongly disagree

Comments

This module has been valuable in the context of my medical education.

Strongly agree agree neutral disagree strongly disagree

If you agree, please try to explain why

Suggestions for the future

What do you think was good about the module?

What was not so good?

How might we improve the course for the future?

Would you recommend this module to other students?

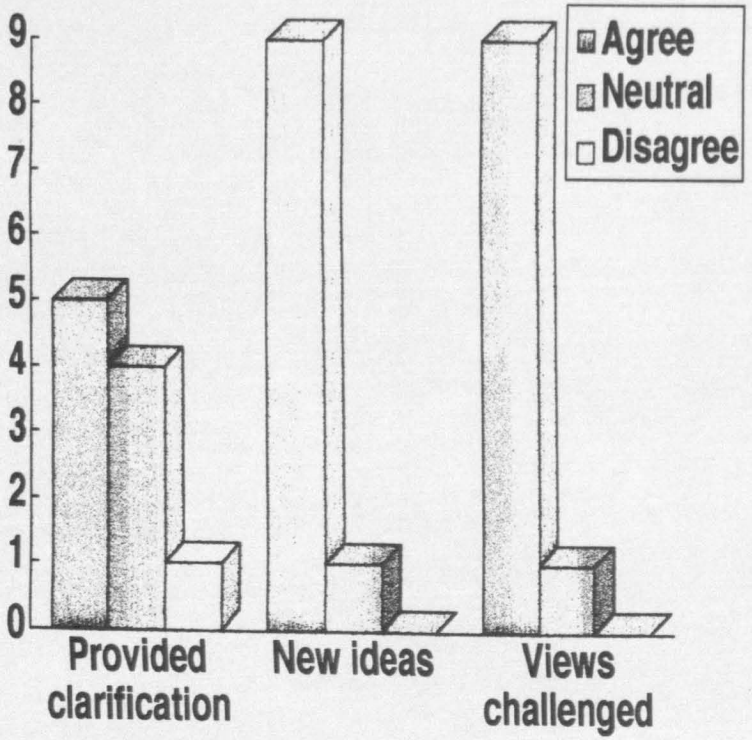
Appendix 5.6

Results of evaluation in graphical form Graphs 1 - 6

Appendix 5.6 Graph 1

Appendix 5.6 Graph 2

Seminars



'Really enjoyed hearing new ideas'

'Too many people in the group'

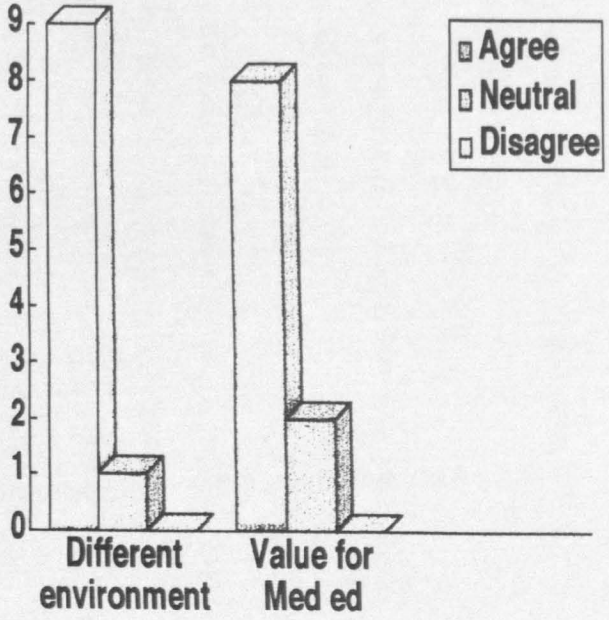
'More time for discussion'

Appendix 5.6 Graph 3

Appendix 5.6 Graph 4

Appendix 5.6 Graph 5

Medical Education



'Made me question things I took for granted'

'..think about things from a different perspective'

'I will never accept anything without justification again'

'Caused me to think about.. what is health? happiness? morality?'

Appendix 5.6 Graph 6

Appendix 5.7

HM's Analytical Exercises

Analytical exercise 1

DUTY AND ENJOYMENT

John

Arguments:

doesn't enjoy work - actively dislikes it

it prevents him from doing other things

recognises that the people in the hostel need help

recognises that he has the means to help

to know this and not help would trouble his conscience

he does help

Analysis:

John has a highly developed sense of duty which makes him feel uncomfortable if he acts in a way he knows is wrong.

He is also socially aware and knows that, although helping out might not benefit his enjoyment, it will help others' lives.

It he didn't help out in the hostel he would feel 'guilty' and his spiritual comfort would suffer - therefore his life is improved overall by helping.

Is doing it and they are not for himself but for the community.

Mary

Arguments:

started work to impress John

this is no longer the case

she finds the people interesting

she gains emotional satisfaction from them

Mary enjoys working at the hostel

so she works there

Analysis:

Mary first started working at the hostel for purely self motivated reasons, but she claims this now irrelevant.

She finds her life enriched by her work and so continues to work there for her enjoyment and satisfaction. The fact that she is helping the needy is a pleasure to her, not an obligation she feels to them.

Although, as Mary enjoys helping people, she is probably a 'nicer' person than John, I don't think her view is morally praiseworthy. She is using the hostel as a route to her own happiness, and her prime motivator is not other people's'.

Analytical Exercise 2

LIES

Frank

His passage is a muddle of arguments, all of which give different reasons why telling a lie is always wrong. I will try and split them into premises and conclusions, and then say what I think of them.

1) the purpose of speech is to tell the truth
it is wrong to deviate from our natural purposes
therefore it is wrong to tell any lie

I am not convinced by this argument as I do not believe either of the premises. He has made a claim about the purpose of speech which has no basis except a teleological viewpoint which I do not share. I don't agree that we have 'natural purposes', so how can it be wrong to deviate from them?

2) all lies have been thought wrong in all times and places
established views are right
therefore it is wrong to tell all lies

Again, I disagree with both premises - all lies are not always thought wrong (as Ann's arguments clearly show) - and established views are not necessarily correct.

3) 'if everyone went about telling lies, society would break down'

This is an appeal to the imagination - 'What if...'. However, Frank is not just talking about 'bad' lies, and in our society white lies (not to mention the worse forms) are extremely common, with no break down of society, on the contrary, they may help to keep it running.

4) all lies create problems in relationships - distrust and isolation
every lie we tell makes it easier for us to tell more
therefore don't start telling lies - it's a slippery slope

This is a convincing argument, apart from the 'all lies' clause, as it includes white lies which often make relationships possible.

5) a lie may be justifiable only if you can be sure that it will result in good
we can never know the consequences of our actions for sure
therefore no lie is justifiable

Frank does not believe premise 1 but is using it to form a counter argument. I also disagree with it but in the opposite direction. I feel it can be moral to make decisions based on the probable, or even possible, outcome.

6) you wouldn't like to be lied to
do unto others as you would have done to you
therefore don't lie

This is an appeal to the imagination, but also fails to convince me by including all lies. I can think of many situations in which I would rather be told a lie than the truth.

7) we need all of every truth to be free and responsible
we have a right to everything that allows us to be free and responsible
therefore we have a right to all of every truth

Again the inclusion of all truth lets this argument down.

Frank has set his views out clearly - most of his arguments are good even if I don't agree with them myself. The main gist of Frank's argument is that it is the act of lying itself that is immoral. He therefore sees any lie as wrong, even if it seems to be for the best. He backs this up in argument 5, but his defence rests on his belief that a lie is wrong in itself, so to be justifiable there must be definite good effects which cancel out the wrong. If, like me, you don't feel that it is the lie that is wrong in itself, but rather some of the reasons you might tell it for, it appears that not to tell a lie, which would to all appearances bring a good effect, would be immoral (the reverse of Frank's argument).

If you take a morally praiseworthy viewpoint to be one where the individual has thought long an hard about the issue and come up with a set of ideas which are in accordance with the person's basically held beliefs and which seem to them to be morally right, then I think you have Frank, though I am not convinced by his argument.

Ann

I will now try to analyse Ann's arguments.

1) it is unnecessary to be obsessive about stepping on cracks on the pavement
always telling the truth, no matter what, is like being obsessive about telling the truth
therefore it is silly to be obsessive about telling the truth

This argument is not very successful, as it employs a bad comparison. There is no reason given why telling the truth is like cracks on the pavement.

2) something is wrong only if it cause harm
a lie doesn't necessarily cause harm
therefore lies which don't cause harm are not wrong

3) something which will cause net harm is wrong
sometimes telling the truth will cause harm
therefore it is wrong to tell the truth if it will cause net harm

These arguments (2 and 3) can be taken together as they are the converse of each other. An is expressing a utilitarian viewpoint, that an action is morally right if it leads to 'good'. If you accept the first premise it is a very convincing argument.

4) some people tell lies and get benefits from them
if some people are doing something there is no reason for you not to
therefore there is no reason not to tell lies which give benefits in
cases when others are

This argument is not at all moral, but Ann is arguing to do what is best for her, without the consequences to others.

5) absolute truth may not exist
it is silly to insist upon some abstract thing that may not exist
therefore it is silly to insist upon the truth

6) truth can be subjective - there can be more than one valid
answer
if there are multiple valid viewpoints and it is wrong to
insist that only your's is right

therefore *it is wrong to insist that you version of the truth is the only one*

These arguments (5 and 6) are taken together became they are moving away from the concrete 'right and wrong' to a more abstract concept of truth (or truths). Ann is hypothesising that there is no one truth, but many, depending on who are where you are. If this is so, it is impossible always to tell the truth, and the elegance of the concept, and hence its claim as a moral ideal, is destroyed, even in cases where the truth seems obvious.

I agree with a lot of Ann's arguments, but I don't think that she is as moral as Frank. She has a number of separate ideas on why it is not necessary always to tell the truth, some of which, such as 2 and 3, can be argued from a moral point of view, but others are more self-interested. She seems to be much more flexible to different circumstances than Frank, which is more in tune with our world, but she lacks the same strong beliefs.