

## “Verities yet in their chaos”

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### Introduction

**T**HIS is a supreme moment in my professional life. In this lecture I hope to honour the memory of Will Pickles and express my esteem for the Royal College of General Practitioners, an institution without whose influence the development of both service and academic general practice would have been a less successful story. It is also a source of real pleasure to me to deliver the lecture in this warm-hearted city of Glasgow where once I worked and for whose college faculty and university department of general practice I have the most sincere respect.

On 26 April 1955 Dr Pickles and I met for the first and only time when he came to Aberdeen as a guest lecturer in the Department of Child Health. I have three enduring memories of the occasion: first, of his love of language and literature, learnedly expressed in his opening quotation, in Latin, from Hippocrates; second, when introduced to me as Lecturer in Social Medicine, he looked quizzically at me and asked how useful I thought some knowledge of epidemiology might be in general practice—surely a prophetic remark; and third, I have a clear memory of a man of humility, of gentleness, of faith in the future of his chosen profession, a man indeed for all seasons.

To be entrusted with the Pickles lecture is a high responsibility, an honour to be cherished and an opportunity to be grasped. You may wonder what my title means, whence it came and what relevance it has to the memory of Will Pickles, to the task of this College and to a professional academic like me. To answer I must take you briefly back to student days 40 years ago in Edinburgh; among my mentors was Charles McNeill, Professor of Child Health, whose spoken and written thoughts about medicine were always worthy of attention. It was he who introduced me to the writings of Sir Thomas Browne, physician and moralist, and in particular to this passage:

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*Let thy studies be as free as thy thoughts and contemplations: but fly not only upon the wings of imagination: joyn sense unto reason and experiment unto speculation, and so give life unto embryon truths and verities yet in their chaos.*

Browne, 1716

In these beautiful words this deeply thoughtful medical man of letters has given all of us an academic philosophy. “Let thy studies be as free as thy thoughts” advocates a cherished freedom to research that can only flourish where independence is guaranteed. When I mention that a higher degree thesis was once submitted to a university consisting of 40,000 words on “The use of the participle in Cicero”, and another of even greater length on “Distortion of mating rituals in the Lesser Three-spined Stickleback”, you could be forgiven for thinking that such freedom can be abused. But so can any true freedom—we all know of doctors who do not care for patients as most of us would wish, we may even know of some general practitioner trainers who feel free to ignore current standards of training practice. Yes, all freedoms may be abused, including institutional power, but that is not an argument for abolishing them. Note that the privilege of freedom of thought is immediately followed by Sir Thomas’s injunction not merely to indulge in flights of fancy, however imaginative they may be, but to join our conceptualizing to experiment, to take our ideas out into the real world and see whether they are true and therefore, in one sense, good. And I need hardly remind you that seeking the truth about good doctoring is what our College stands for. May I add this reminder, that experiment always means measurement.

If, says Sir Thomas, you first think imaginatively and with feeling (“sense unto reason”), and then put your ideas to the test through measured experiment, thus will you discover that what at first seems to be an amorphous mass (“chaos”) has order and meaning (“verities”).

Any modernists who believe Brownian philosophy to

be out of date should read Sir Peter Medawar (1979). Among his collection of gems are these aphorisms:

*The generative act in science is imaginative guesswork.*

*The business of science consists not of hunting for facts but in testing hypotheses by experimentation.*

*The scientist is a seeker after truth.*

Note that two and a half centuries after Browne, Medawar is using similar words in the same sense. And for those who are sensitive to the overuse of the word 'science' may I quote a now famous saying of Medawar:

*By the art of the soluble I meant that the art of research is that of making a problem soluble by finding out ways of getting at it.*

And here is the same point in the words of an artist:

*You can only discover what is already there waiting to be discovered.*

Grenfell, 1979

If you can accept my rather homespun definition of philosophy as the demonstration by reason of some common end that is desirable for all men, it seems to me that what ancient and modern sages are saying to us is this: if you wish to advance your art (practice), then try to use science wherever possible, but do not neglect the humanizing influence of philosophy. Since I think that this is what Will Pickles believed, and that professional academics ought to embrace something of both art and science, my theme is how a university teacher of general practice should blend science and humanity into a philosophy of teaching, research, patient care and administration.

## Teaching

For most, but not all, whole-time academics, teaching is their *raison-d'être*, and it remains my own priority. I am aware, at times acutely, of the poor quality of much university teaching and I continue to regret that, despite all we now know about how to improve the arrangement and presentation of content so as to improve learning, there is still much ineffective, unattractive teaching. Whenever possible I used to attend inaugural lectures, no matter the faculty or the chair represented, because I wanted to learn more about successful teaching methods; the subjects varied from the nature and purpose of the Roman orgy (packed with students but, alas, with no pictures) to a profusely illustrated account of rather nasty diseases to which infantile Scots trees are prone (only forestry students present), from a magnificent explanation of molecular biology and its significance in malignant disease to a real show-biz approach to nuclear physics which involved some 200 slides shot on the screen by twin projectors with an intermittent musical accompaniment and around a dozen pieces of

**Table 1.** Graduates' opinions of the teaching of undergraduate subjects.

Subject	Number of opinions that teaching		Percentage of all opinions on that subject
	excessive	insufficient	
Anatomy	221		64
Biochemistry	163		48
Statistics	63		19
General practice		197	57
Dermatology		188	55
Ear, nose and throat		185	54

film, not one of which I understood. And yet I learned three lessons from this youthful enthusiasm; first, that teacher vitality is not only a desirable quality but also that this vitality is not to be equated with a knockabout Morecambe and Wise type performance; second, that essential to vitality is a deeply sincere belief in one's own subject; and third, that the generation of ideas is vital to vitality. I have to confess, and there may be here a tinge of ageing nostalgia for simpler times, to some concern lest teacher training in medicine be overconcerned with ideas which are current in educational science but which have no proven adult value, and too little concerned with measuring effective learning. And by learning I hasten to assure you I mean not only numerical facts about drugs and diseases, not only the acquisition of skills, like the minimizing of pain and fear in a little child with a sore throat and ear, not just the development of beliefs and the attitudes derived from beliefs about the ethical obligations of doctors; I mean most emphatically learning to criticize, and by that I refer to learning to distinguish what is good and true, yes and beautiful, from what is shoddy, superficial and false. That great educationist Sir Richard Livingstone once wrote:

*I would say that an educated man knows and an uneducated man does not know, what is first-rate, and that the educated man is he who knows the first-rate in the most important human activities.*

Having emphasized that the only way of getting to know what is first-rate is by seeing it, Livingstone concluded:

*An education which leaves us without a philosophy of life is as incomplete as one which leaves us unable to think or to express our thoughts. Our education should train our youth to desire, recognise and pursue the first-rate.*

Livingstone, 1953

This is the age of evidence rather than authority in medicine; our medical young know that there are now available ways of studying and measuring education, both its processes and products, and they want these methods used to complement, to reinforce, but not

wholly to supplant, authority. So let me show you a few findings from some simple measurements I have made, and which stem from my guess that recent consumers of medical education were likely to have views on its relevance to their careers. I followed up five Aberdeen medical classes (Richardson and Taylor, 1980) who graduated in the early 1970s and asked them five years later to record their career pathways and their ratings of all the subjects in their undergraduate curriculum. Of 423 graduates approached, 371 replied, a response rate of 88 per cent. Table 1 shows some of the main findings.

Despite the limitations of retrospective studies, and bearing in mind that reduction of the Aberdeen curriculum to five years did not alter the amount of general practice teaching, I should be surprised if more recent graduates feel differently. When I tell you that two out of three of those in general practice five years after graduation said that general practice had been insufficient in the curriculum, and of those not in general practice (mainly in hospital medicine) no less than two out of four also said this, you will, I hope, agree that this striking result is not due to a strong career bias, but genuinely reflects a view that, of all subjects in the curriculum, the one most in need of expansion is general medical practice—and can you hear the ghost of Sir James Mackenzie saying “I told you so” in 1917?

In the same questionnaire respondents were asked to rate the adequacy of teaching in four aspects of medical care in their student years. Table 2 gives the results.

The variation between doctors in general practice and doctors in hospital was again small. I do not claim that these hitherto unpublished data prove beyond doubt that more attention is required in the curriculum to the problems and needs of patients outside hospital, but I am bound to say that they confirm rather than refute that hypothesis. Of course I admit to bias in the sense that these findings are not only what I expected but also hoped for, but I do assure you that much care was taken to avoid bias in the design of the questionnaire. I would like to think that these data will strengthen the hand of those of us who continue the long and sometimes lonely argument for more undergraduate clinical teaching in general practice.

## Research

You will be aware how teaching and research can be inseparable, and you may see how my belief in the need for an educational philosophy has led me to seek well-garnered evidence rather than subjective authority as its foundation. I believe that health care in the community must become more prominent in all undergraduate curricula—that is my departmental aim; its attainment will be slow—but sure—if the case is argued well and backed by sound measurement.

Though postgraduate education has been substantially taken over by National Health Service agencies, I for one would hope the universities will continue to

**Table 2.** Opinions on adequacy of teaching of four topics.

Topic	Percentage of 371 graduates opining that teaching insufficient
Patient management outside hospital	72
Ancillary social services	71
Individual patient problems including psychosocial aspects	43
Practical experience of diagnostic and therapeutic procedures	11

**Table 3.** School certificate scores of entrants to Aberdeen Vocational Training Scheme (number of entrants in brackets).

Years	Average score
1973-75	13.8 (26)
1978-80	19.5 (33)

contribute actively to vocational training and to on-going education. In recent times I have begun to wonder if general practice training is losing some of the theoretical impetus which initially characterized it; the novelty of behavioural and educational science seems to be wearing off. One reason for this is, I suspect, the reluctance of some trainers and organizers to define ideas accurately and put them to the test. Take, for instance, the term ‘workshop’—what does it mean? Is it no more than a group of trainers sitting round and discussing a topic for which most have done no preparation and to which only a few contribute effectively? Or is it a group of trainers who examine ideas and practice critically, work out simple hypotheses, then collect data to test their truth and finally return to the training practice better equipped to assist trainee learning? I do not decry the many simple accounts of training procedures, but description alone, without putting beliefs to the test where this can be done, is not enough. For example, if entrants to vocational training are more able than their predecessors, what effect will this have on training? My own hypothesis is that the more intelligent the student, the greater his or her self-learning capacity. Courses will then need less structuring. So what is happening now to the quality of entrants to general practice? Table 3 shows one way of answering in measured terms; the school certificate scores used are based on a simple numerical weighting given to grade of pass in Scottish Highers and English A levels, and elsewhere (Richardson, 1980) I have demonstrated their strong correlation with degree of success at medical school.

This 50 per cent rise in school examination performance strongly suggests a substantial increase in the complex of abilities which is tested by such examin-

ation. Of course I cannot infer that this increase in ability guarantees better future doctors; but I repeat, it points towards higher learning capacities. This has implications for training methods.

If verities are to emerge from chaos, measurement is quite critically important, and here I have to express disappointment that the College does not appear to practice what it preaches in the matter of evaluation. I do not understand why the insistence on rigorous scientific design which has characterized, for example, the College study of oral contraception has not been applied to the correlation between training experience and showing in the MRCGP exam. Each year hundreds of young general practitioners record a large amount of information about their professional career in both their application forms and log diaries and do so before sitting the five-section membership examination; their examination performance is recorded and could be analysed in considerably greater detail. This information should surely be used to study the influence of different patterns of vocational training on success in the exam, which, for the present at least, is as good an instrument as we are likely to get for assessing some aspects of competence in general practice. The MRCGP can measure a sample of factual knowledge and can detect degrees of some skills; specifiable knowledge and skills are essential to sound clinical method and should rank alongside but not inferior to psychological and sociological understanding, both of which are less amenable to measured testing in professional examinations.

So may I yet again respectfully but critically suggest that the College, either itself or through another academic agency, make far more use of its examination to discover what are the characteristics of successful training. A final word on this important question; by comparatively slight modifications of the application form, by careful scrutiny of the results of a more stratified MCQ paper and by long-term follow-up of selected samples of candidates, I believe we could extract some valuable learning verities from the present uncertainty (or chaos) about vocational and post-vocational training.

### **Patient care**

On the third responsibility of university clinical staff, patient care, I speak only briefly, with diffidence but with sincerity. If a professional academic is to achieve high competence in undergraduate teaching and research, he or she cannot hope to retain all the clinical skills of his or her colleagues who are practising full-time. Nor indeed do I believe it is necessary to do so, certainly not for undergraduate purposes, where the emphasis ought to be on the principles of clinical method, on patients with common conditions, on communication in the doctor-patient relationship and (in the final year) on vocational guidance.

That all who teach a clinical subject should be in continual contact with patients is surely a truism that does not require rigid formulae on numbers of sessions, especially for those academics who are frequently absent from the consulting room because of their travel obligations. More importantly, I want to point to the limitations imposed on our discipline where it is not autonomous. Why should academic general practice not enjoy the same independent status as medicine, paediatrics or psychiatry? What is the special communion of content between, for example, community medicine and general practice that has produced hybrid departments of community health? As a trained epidemiologist and a former member of staff in a university department of social medicine I can see no more rational an argument for pairing general practice with community medicine than I can see for pairing chemical pathology with psychiatry. Of course the research and teaching approaches of my department require epidemiological skills—allow me in passing to make clear my definition of epidemiology as the study of the distribution and determinants of care as well as of health and disease—but general practice, in addition to having distinctive skills of its own, shares many skills with other clinical disciplines, and should not in my view be seen either as an academic sub-unit or a unit that embraces another.

My last comment on the patient-care component of university general practice is as much personal as it is professional. I need to see patients, not just because I cannot know either what to teach or what to research into unless I do, but also because I am me; during the whole of my academic career, including periods when I was not supposed to, I have managed to continue some responsibility for patient care and to protect my basic clinical skills from total atrophy. How otherwise could I advocate a philosophy which combines the sciences and the arts, which acknowledges thought and feeling and which allows deeply personal need to be expressed?

### **Other obligations**

Many times now have I heard, and sometimes shared, the general practitioner view that specialist doctors with no experience of practice outside the hospital often do not fully understand the problems of either family doctors or their patients. I like to think that a few weeks' attachment to a practice for all final-year students will increase future specialists' understanding of the outside world, but in this lecture I am much more concerned about how little many general practitioners know of life in a modern university—not surprising, perhaps, when their last close contact with a medical school was in their own undergraduate days. But just as general practice has changed from the Tannochbrae style of Dr Finlay and Dr Cameron, so there are no longer medical students still in their first year after 12 attempts to pass into their second. (As a junior examiner in anatomy for a short while, I remember one such

likeable character to whom in an oral I showed a humerus and asked what it was; after a long pause he managed to reply "It's a bone, sir." Taken aback but willing to allow for *viva* anxiety, I refrained from comment and asked, "Yes, now which bone is it?" This time the answer was immediate: "Sir, I just want a pass, not honours.") In the medical faculty today there are no staff who clear off each afternoon to see private patients, to listen to music or to play the royal and ancient game on the links, as once may have been the case. Let me illustrate some of the duties which a 'complete academic' may now expect to fulfil, duties which lie beyond any special field but which require an imaginative, sensitive and reasoning experience.

If there is one academic topic that is liable to turn normally rational and emotionally stable people into hypomanic blunderbusses, it is the basis of admission to medical school. As a former convenor of an admissions committee I can testify to the quantity and nature of the verbal missiles that were hurled at us because our criteria did not fit the cherished but usually not well-informed views of a variety of critics. Though I did manage to introduce a policy and procedure which were as fair as existing knowledge allowed, the real need was and is for a detailed specification of what we are trying to produce as the outcome of undergraduate medical education; if we knew what 'goodness' is in all the major divisions of medicine, including primary care, then perhaps we could work back to a statement of educational, personality and other behavioural requirements for entry to medicine. But there are two serious difficulties in the way: one is that 'goodness' in adult medical practice is so imprecise as to be difficult to assess in an adolescent, and the other is that desirable adult qualities may be too latent in young people to be detectable by written application, interview or psychological test. At least there is this to be said for the use of school certificate examination performance as one (but not the only) main criterion for selection: it can be quantified and used in prediction, and there is certainly a marked correlation between level of scholastic achievement and measures of examination success at medical school. What we still have to discover is the correlation between these measures and whatever is deemed 'success' in medical practice; at this moment I am sure that some of my audience are ready to ask me what possible justification there is for the medical school entry requirement of Higher or A level physics. The only honest answer I can give is, "Some but not a lot". I can see that simple knowledge of mechanical principles will help in understanding the diagnosis and management of injuries and muscle and joint disorders; and it requires no effort of imagination to realize that some knowledge of molecular biology will illuminate genetic counselling and the prevention of radiation disease. I suppose that an ECG does have more meaning if some elementary electrical principles are understood. Of course it is true that general practitioners do not use

medical physics as much as consultants in radiotherapy, but do please remember that, even by final year, most medical students are still not sure of their career choice. Undergraduate medical education should offer all students a reasonable helping of relevant knowledge in all specialties so that they know what is involved in each potential career.

Lest you deem admission criteria a digression, let me assure you that the effective performance of academic tasks outwith one's own discipline can and often does enhance the discipline itself. The second illustration of this principle comes from my current responsibility as convenor of the committee which deals with medical students who are bad attenders or whose performance in examinations is poor enough for them to be in breach of university regulations. Students get into difficulty for varied reasons, such as ill-health, which can range from a debilitating attack of glandular fever to a disabling depression, illness or death of a relative or close friend, or accommodation problems. I shall not easily forget a second-year student whose barely adequate performance in the first year fell sharply away in the second; her preclinical teachers could extract no more than vague explanations such as a "problem with where to live"; finally a disastrous exam result led to her referral to my committee. Years ago we introduced an informal meeting between the referred student and two members prior to his or her formal appearance before the full committee, a humane procedure that has enabled us to reach deeper into the real reasons for failure. The student appeared before my colleague and myself on a cold, wet day; she was soaked, white with cold and her pride could no longer conceal the misery brought about by a family disruption which cut her main supply of money and forced her to live in a tent on a caravan site—little wonder she could not study effectively. We were able to help and she is now a doctor.

Even with a finely adjusted empathy that enables one to feel the student's state of anxiety and shame over failing without losing the detachment necessary to view the problem from all sides, even with such a philosophy, this kind of academic task makes the same demands on me as care of the dying; to this audience I need not explain that further. But this I must say—I believe that not only does my discipline of family doctoring fit me to help students in academic difficulty more than some of my colleagues in other subjects, but I also believe that this service on behalf of the faculty of medicine reflects well on my discipline. Perhaps it had not occurred to you that being a personal and primary doctor fits you for tasks beyond general practice. I would like to think that I have shown you the generalizing nature of a true philosophy.

### **Reflection**

You as active members of the College are committed to the study and promotion of the scope and standards of

primary health care, and thus most of you require some knowledge of academic practice. Truly professional university staff ought to be committed to the study and promotion of truth in their chosen discipline, and as such must clearly keep contact with clinical practice. It has been, is and will continue to be my policy to promote a partnership between service and university, based upon a clear understanding of, and respect for, each other's skills. What unites us is a philosophy which blends the imaginative guesswork of patient care and the imaginative guesswork of teaching and research. In using thought and feeling, Sir Thomas Browne's reason and sense, to clarify and resolve the needs of patients, of students and of a scientific society, we share common means and common ends. But there is still much to do before the philosophy of primary care is deep enough to claim the kind of eternal verity implied in my title. As is my right I have criticized the College for not mining its own rich vein of training data; as is my duty I now congratulate it on a publication which has eternal verities in it—*The Future General Practitioner*. I would like to think that an up-to-date new edition of what has been for me and many others an educational vademecum will receive top priority commissioning by the College and achieve a further fine expression of *scientia et caritas*.

"Bright thoughts, clear deeds, are the gems of noble minds", said Sir Thomas Browne. Dr Will Pickles had just such a mind, and his spirit continues to illuminate my pathway. I think he would have understood my final expression of faith. In 1967 I exchanged the security and satisfaction of social medicine for the uncertainties and the challenge of academic general practice. Like Edith Piaf, "*Je ne regrette rien*." I made the move because I care deeply about helping young people to harness truth and compassion to the relief of illness and to the promotion of health by the family doctor. If a fortunate man be one who believes in what he is doing, then like Dr Will I am indeed fortunate.

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The number of people who have significantly influenced and inspired me in the last 40 years is so large that individual acknowledgement of my debt is impossible. To all who have taught me professionally and

supported me personally I gladly here pay tribute. The 1981 Pickles lecture is substantially a distillation of their goodness.

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## Time and pomegranates

A disciple went to the house of a Sufi physician and asked to become an apprentice in the art of medicine.

"You are impatient," said the doctor "and so you will fail to observe things which you will need to learn."

But the young man pleaded, and the Sufi agreed to accept him.

After some years the youth felt that he could exercise some of the skills which he had learnt. One day a man was walking towards the house and the doctor—looking at him from a distance—said: "That man is ill. He needs pomegranates."

"You have made the diagnosis—let me prescribe for him, and I will have done half the work", said the student.

"Very well," said the teacher, "providing that you remember that action should also be looked at as illustration."

As soon as the patient arrived at the doorstep, the student brought him in and said: "You are ill. Take pomegranates."

"Pomegranates!" shouted the patient, "Pomegranates to you—nonsense!" And he went away.

The young man asked his master what the meaning of the interchange had been.

"I will illustrate it next time we get a similar case", said the Sufi.

Shortly afterwards the two were sitting outside the house when the master looked up briefly and saw a man approaching.

"Here is an illustration for you—a man who needs pomegranates", he said. The patient was brought in, and the doctor said to him:

"You are a difficult and intricate case, I can see that. Let me see . . . yes, you need a special diet. This must be composed of something round, with small sacs inside it, naturally occurring. An orange . . . that would be of the wrong colour . . . lemons are too acid . . . I have it: pomegranates!"

The patient went away, delighted and grateful.

"But Master," said the student, "why did you not say 'pomegranates' straight away?"

"Because", said the Sufi, "he needed *time* as well as pomegranates."

Source: Idries Shah (1978). *A Perfumed Scorpion*. London: The Octagon Press, pages 97-98.