



On a *Medicine of the Whole Person*: away from scientific reductionism and towards the embrace of the complex in clinical practice*

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Introduction

Si quis dixerit 'Medicina non scientia est', anathema sit. 'If anyone says medicine is not a science, let him be condemned'. Readers with more than a cursory familiarity with Roman Catholic dogmatic theology would be forgiven for imagining that the editorial board charged with the latest revision of Denzinger [1] had co-opted one of the few remaining apologists of the evidence-based medicine (EBM) movement to its work. Certainly, if such a condemnation were to be introduced into that formidable mechanism charged with the protection of the *Depositum Fidei*, then this author would surely face formal censure. For it is his opinion that medicine is decidedly *not* a science, but rather primarily a human endeavour which employs science – and only in part [2,3]. Medicine, then, is a *science-using practice*, but science cannot represent or be equated with the essence of medicine in any fundamental sense. In describing medicine, we must therefore draw the distinction between the word *scientific* (which correctly describes much of medicine's knowledge) and the word *science* (which falsely describes medicine's nature). It was a considerable honour to deliver a keynote Lecture on this core thesis to Università La Sapienza in Rome in late 2008. The current Essay presents the central argumentation advanced within the Lecture and builds upon the elements of the discussions that took place subsequent to the Address.

The Oxford English Dictionary defines 'progress' as 'forward or onward movement towards a destination', or 'development towards a better, more complete modern condition' [4]. Does, then, the accumulation of a science base on which medicine can draw, represent progress by this definition, or not? Yes, this is incontrovertible, if we accept the 'destination' of medicine as the complete

prevention of disease or the possibility of complete therapeutic success. But can such progress bring with it disadvantages as well as advantages? Yes, this too is incontrovertible in my view, and as I shall aim to show. The *advantages* of the accumulated science base of medicine are well known and have enabled hitherto undreamed of therapeutic progress and huge shifts in individual and population health, indeed exponentially so within the last 120 years [5–7]. Less well understood and appreciated are, however, the *disadvantages* occasioned by the development of the science base of medicine and it is the recognition and study of these which is a prerequisite for their minimization or even eradication, without which minimization and eradication, the progress of truly humanistic medicine will remain interrupted. What, then, is Medicine for? Where has Medicine gone wrong? What can we do to put Medicine right again?

What is medicine for?

A vast literature has accumulated on the ethos, nature and historic mission of medicine, but for the purposes of the present work, I dare to summarize here the foundational philosophy of medicine as: 'to cure sometimes, to relieve often, to comfort always'. Attributed originally to Hippocrates by some authors, but traced back only to the fifteenth century by others, this striking maxim became far more closely associated in recent times with the nineteenth century physician Dr Edward Livingstone Trudeau. Trudeau arrived at Saranac Lake in the Adirondack mountains of New York in 1872 preparing to die from pulmonary tuberculosis, but in fact continued to live until 1915 (a longevity which he attributed in part to the characteristics of his environment), founding a number of important health facilities and sanatoria at Saranac Lake during that time. On a statue of Trudeau created by the celebrated

American artist and sculptor John Gutzon de la Mothe Borglum in 1918, 3 years after Trudeau's death (and currently housed in the Trudeau Institute on Algonquin, Saranac Lake) are those very words describing the mission of medicine in the French: *Guerir quelquefois, soulager souvent, consoler toujours*. The original maxim must surely be prefaced today with 'To prevent illness as far as possible' and might, perhaps, be concluded with: 'and to assist death when necessary', although while the imperative for the former is established within medicine, the possibility of the latter remains a subject of intensive ongoing philosophical, legal and, indeed, greatly emotional debate. If, then, we omit from current consideration this last possibility and retain as we must the first, then are we able to claim that modern medicine has fulfilled these four conceptually different, yet highly interrelated missions? I answer in the negative for all but the second and argue that medicine has 'gone wrong' in the first, third and fourth.

Where has medicine gone wrong?

The consequences of medicine's 'going wrong', a malfunction which has resulted from a disproportionate emphasis on the second imperative of the four missions of medicine considered above, is that medicine has ceased to be holistic in its nature, a seriously worrying development which calls for an urgent explanation. Aetiologically, the loss of holism in medicine has occurred as a direct function of a growing scientific reductionism in medicine in the face of a dramatically increasing complexity [8]. The symptoms of such scientific reductionism are seen in the very existence and characteristics of the EBM movement [9–22] and in the substantial increase in interest in complementary and alternative medicine (CAM) and its practitioners being shown by patients internationally [23]. As Gordon [24] has said, biomedicine, once seen as a potential cure-all, has limits and dangers that are now more clearly understood by patients than ever before and this observation, coupled with a diminution in caring in medicine, has resulted in the public acceptance of alternative medicine, directly challenging the newly acquired primacy of the biomedical paradigm and occasioning outrage within clinical and scientific circles. This has led some doctors to despair in the face of public credulity and others to jump onto a lucrative bandwagon, paradoxically multiplying the potential for harm to patients. If a growing number of patients are rejecting the sufficiency of orthodox medicine alone, it is not because it is ineffective, but rather because it has become inhuman and depersonalized.

That medicine is convulsing over this metamorphosis – the transfiguration from an entirely necessary holism to the reductionist, technical application of procedures and administration of drugs which now typifies modern medical practice in the Western world – is demonstrated not least in part by the current epistemological crisis in medicine [25], but also by the rise in interest by *medically trained practitioners themselves* in so-called integrated (ive) medicine, in the medical humanities, in spiritual/religious care and in patient-focused, relationship-centred clinical practice in general [26]. It would seem, then, as if we are in the midst of a battle for the heart and soul of medicine itself between two increasingly separate philosophies whose future is surely not to exist as polar opposites, but rather to function as an united whole, integrated then, in the direct service of patient and clinician, medicine and human progress.

The misrepresentation of medicine

If it is accepted that medicine is *not* a science, but rather a science-using practice, then why do doctors collude in the misrepresentation of medicine as a science, subordinating the noble arts of medicine to positivistic reductionism, so that the science and arts of medicine are decoupled, suggesting that they can function as alternatives? First, and as Montgomery [2] points out, the status of medicine in Society depends in considerable measure on the scientific nature of much of its information, a status that the majority of doctors would be loathed to relinquish. But the increase in the scientific nature of medicine that has underpinned this status does not make medicine a science. Second, when one examines the abilities of medicine to ameliorate, attenuate and cure conditions and diseases in 1899, for example, and compare it to the present year of 2009 – or even halfway to the 1960s – then it is easy to understand the awe, excitement, joy and optimism of the modern clinician when he looks at his own potential and compares it directly to that of his predecessors. He will be right to recognize that it has been the rapidly expanding science base of medicine that has represented the prime mover of such staggering progress. Certainly, a huge accumulation of biological knowledge of relevance to the care of patients has resulted in a quite extraordinary expansion of the drug-based therapeutic armamentarium and where this increase in pharmacotherapeutics and biological therapies has been matched by an equally extraordinary increase in the library of technical procedures in medicine and surgery. These developments have revolutionized, to be sure, the scope and power of medicine and the nature of its effects and outcomes in individuals and populations. But this accumulation of the science base of medicine, while it has made medicine more *scientific*, does not make medicine a science. Third, in times of illness and distress, patients want, indeed perhaps *need*, to consider their physicians as learned, assured and quintessentially infallible figures. The allure of science as a means of attaining such 'perfection' in practice is clearly very attractive to clinicians and patients and so, for their own respective reasons, neither patients nor doctors are motivated to challenge this *folie a deux* [2]. But submitting to this allurements does not make medicine a science. Rather, it perpetuates the *myth* of medicine as science, representing a serious intellectual dishonesty among doctors that increases their self-delusion in this context and raises unrealistic expectations in patients, the outcome of which can be seen in the huge rise in malpractice claims and negligence suits and in the necessity to institute increasing numbers of health care quality assurance and risk management programmes within international health services. Is the existence of such developments commensurate with the idea of medicine as a replicable, quasi-infallible, probabilistically predictable science? I think not.

On the basis of these observations, Montgomery [2] is surely right to argue that we therefore make a great, even dangerous mistake about medicine when we assume it to be a science in the realist Newtonian sense, or even as Lewis Thomas once described it, as the 'youngest science'. Indeed, such an assumption leads directly to the expectation that medical knowledge is invariant, objective and always replicable – which it most certainly is not [2,3]. So if medicine is not a science, then is it an art? For me, the answer is unexpectedly simple, even if the process is not. Medicine is neither a science nor an art, but rather a rational practice based

on a scientific education and sound clinical experience [2]. Montgomery sees the art and science of medicine in terms of a binary economy, where art and science need to be yoked together yet held apart in order to accrue the strengths of their polar positions – soft versus hard, intuitive versus analytical, inductive versus deductive, visual versus logical [2]. For her, then, an inadequate understanding of this interrelationship has the potential to render medicine facilely described and poorly understood, given that medicine is far more than just a body of scientific knowledge and a collection of well-practised skills, but rather the conjunction of the two: ‘the rational, clinically experienced and scientifically informed *care* of sick people’ [2]. For Leggett [27], the practice of medicine has advanced from being an art to become a *scientific art*. He acknowledges that there are those who would wish it to progress to the level of applied science, but recognizes that this would devastate medicine’s properly holistic nature in favour of the medical scientism we shall consider shortly.

Science cannot cure or care, doctors do

Science, then, *cannot care*, it itself is *not* a caring profession as Medicine and Nursing are, although science can *cure* sometimes, even often, when properly employed within clinical practice. Indeed, it is often said that until it is possible for clinicians to cure always or ameliorate completely, it is their ‘reasonable responsibility’ to provide the comfort of genuine human empathy. Such reasoning, while entirely noble in sentiment, seems to assume that comforting is a substitute for curing when curing is not possible, such that when curing becomes possible, it will substitute for comforting, that comforting and caring would somehow then become *ipso facto* redundant and unnecessary. In reality, curing should *never* be disassociated from comforting and caring; otherwise, medicine becomes nothing more than the application of technical procedures or the administration of medications outside of the context of the necessarily human encounter of which we have made mention earlier. In ceasing to hold fast to such imperatives, medicine has gone badly ‘wrong’.

Having become seduced by the power of science and overestimating its significance in the care of the individual as a result, assisted by the errors of EBM (which I shall consider in some detail below), doctors now no longer consider it their role to provide the person-centred, relationship-based, holistic model of care that was viewed essential by their predecessors and held as a natural inclination of the vocation to medicine. This inclination, nourished in the undergraduate and early postgraduate years and then exercised automatically in practice, led to a refinement of technique and a depth of understanding deriving from the ongoing experience of the dilemmas and circumstances of patients and, indeed, from those in the doctor’s own life, all of which knowledge, when experienced, and with the relevant lessons learned, was routinely employed, and extremely valuably so, in the care of patients. Having progressively *disintegrated* caring from curing, attenuating and ameliorating, medicine as it is practised today, has become radically incomplete, its entirely necessary holism consequently fractured, if not left in ruins.

The central cause of this disintegration of good medical practice has been the rise of *scientism*. What shall we say of scientism? How do we recognize it in Society in general and in Medicine in particular? Certainly, a large literature has examined the pheno-

menon itself and the reader is referred to two notable texts for substantial study [28,29]. Suffice it is, for the purposes of this Essay, to reflect briefly on its principal characteristics, in order to illustrate its emergence in medical theory and practice and to call for its urgent removal.

Scientism

There are, to be sure, many definitions of scientism. My own definition, based on Hayek [30], Ryder [31] and Haack [29], reads as follows:

Scientism is a philosophical position that exalts the methods of the natural sciences above all other modes of human inquiry, such that the embrace of empiricism and mechanical materialist thought as means of explication of physical, social, cultural and psychological phenomena, results in a positivistic and dogmatic stance that, in an abuse of reason, transmogrifies a rational philosophy of science into an irrational one, far more likely to obscure a proper understanding of the human life and condition than to enable it.

Scientism derives from the general empiricism of the Enlightenment and is most frequently associated with the thinking of August Comte [32]. Comte, who died at the age of 59 in 1857, held that true knowledge is derived only from perceptual experience, cleaving, then, to a fairly absolutist empiricism which insists that ‘truth’ and ‘knowing’ can only arise from objective observation, experiment and analysis.

Comte’s vision embraced the so-called Newtonian ideal – that objective and replicable observation is the only basis for real knowledge. While certainly hugely influenced by the Enlightenment, he freely attacked several of its leading philosophers. He objected strongly, for example, to the concept of freedom of thought. For Comte, this was a dogma, an entirely negative concept that had the potential, if not direct effect, of sabotaging the social order. Indeed, consider this:

It is only through the positive polity (that) the revolutionary spirit can be harnessed . . . the positive spirit tends to consolidate order . . . and supports the general order by leading people’s understanding back to the normal condition, through the influence of method, before there has been time to develop some social theory. It dispels disorder by once and for all fixing a series of undebatable conditions for the study of political questions. [33]

Reflecting on such statements, it is unsurprising, perhaps, to learn that scientism claims that all philosophy is a ‘bourgeois invention’, that social science and psychology should be reduced to biology and that because science, as a ‘politically neutral endeavour’, can combat irrationalism and obscurantism, it should, therefore, reign supreme in the understanding and organization of human Society [34,35].

Such argumentation, perhaps more accurately described as hallucination, immediately demonstrates the ‘ideological straight-jacket’ of positivism, such that Comte directly creates a justification in philosophy for authoritarianism [36]. Scientism explicitly claims that the natural sciences have *authority* over all other systems of knowledge generation and knowing, whether these are philosophical, religious/spiritual, humanistic or mystical. Thus, scientism, by its radically ideological nature, precludes all real insight into the meaning and purpose of human life, suffering and death, into

beauty derivable from the visual arts, into the value of Music, Literature, Philosophy, Psychology, Religion/Spirituality, the emotions; that is to say, it directly diminishes importance of all of the things which matter most in human life. Scientism is therefore totalitarian by its nature and with strident arrogance assumes and asserts that science and scientific inquiry alone have the capacity to describe reality and to determine what is knowledge and what is not. It is no surprise, then, to learn that such an attempted diminution of the nature of human reality and experience should have led to the description of scientism as ‘the greatest of the intellectual sins’ [37], even though it has become in an increasingly secularizing Society a form of faith and belief in itself [38]. Depressingly, we see the spectacle of scientism violating the authority of non-scientific disciplines with, for example, claims that scientific knowledge can be a source of human values as well as a source of explanation of meaning and purpose, a manifest absurdity, since the former remains the preserve of Morality and Ethics and the latter the preserve of Theology and Religion. The idea that science can explain and guide human existence and that what it cannot explain now it will eventually come to explain as a function of its own advancement has been aptly termed the ‘Myth of Progress’ [39]. It is precisely because science cannot answer some of the most fundamental questions of relevance to human life that scientism is so toxic as a dogma – it leaves unanswered the central questions of relevance to human existence and should it ever be allowed to achieve an ultimate dominance within Society and Medicine would hugely impoverish what it is to be human and whole.

Scientists and scientism

Can those individuals and doctors accused of scientism still qualify for the description of *scientist* (a word, incidentally, first coined only in 1833 by the English philosopher-priest-theologian and historian of science William Whewell [40]) or should they lose this appellation on the basis that their scientism *ipso facto* demonstrates their ignorance of the limits of science through overestimating its strengths? After all, such an overestimation of the limits of science and the misunderstanding it represents actually does science, in reality, a considerable disservice. To argue for the summary removal of a title is always problematic; we will all be guilty at some juncture of exaggerating the status and relevance of something for which we feel a strong attachment – enthusiasm and excitement predispose to this. So perhaps we can think in terms of two very different forms of scientist. One who appreciates the limits of science and rightly seeks to explore *if* and *how* those limits might be diminished. And another type of scientist *who dismisses the very notion that science can have any limits*. For this latter and very particular form of scientist, if current science has limits, it is because more science is needed to overcome the limits and correct as part of this process a deficit that has simply been waiting to be corrected. We may call the latter individual a scientist rather than employ the word *scientismist*, but the person still remains well described as a ‘scientific scientist’, because some form of descriptor is required to distinguish our second form of scientist from our first.

Certainly, a doctor who is justly accused of scientism, a *scientific physician*, is in my own view axiomatically a bad doctor, as good medicine can never be characterized by the intellectual incoherence of radical reductionism and a fundamental misjudgement

of the foundational nature of medicine as primarily a human endeavour informed, but not dictated to, by its science base. Could the use of the term scientism in the context of EBM represent nothing more than a rhetorical device designed to marginalize an important new movement on the basis of myopic traditionalism and nostalgia for the humanistic flavour of a medicine long demised? I would argue vigorously to the contrary. It is precisely EBM’s appeal to scientific authority in a field – Medicine – where science applies only partially and its privileging of scientific method and scientific knowing above all other forms of understanding and knowing that is my justification for the use of the term.

Scientism, absolutism and arrogance

Scientists are often accused of arrogance and inflexibility as a function of their success within their respective fields, displaying characteristics more in the manner of the religious fundamentalist than in that of the objective intellectual. If the reader would wish to dispute such assertions, he might like first to consider the following from Dawkins’ *The Selfish Gene* [41] which has led to that author being labelled ‘hysterically scientific’:

Is there a meaning to life? What are we for? What is Man?

When you are actually challenged to think of pre-Darwinian answers to the(se) questions, can you, as a matter of fact, think of any that are not now worthless except for their (considerable) historical interest? There is such a thing as being just plain wrong, and that is what, before 1859, all answers to these questions were.

In fact, when it comes to understanding Theology and Philosophy well enough to be able to come to such an extraordinary conclusion, Dawkins has displayed an arresting ignorance that is immediately apparent to anyone remotely familiar with Thomas Aquinas’ *Summa Theologica* or as even a cursory read of *The Dawkins Delusion* [42] would illustrate. Let us now turn to how such examples of scientism, within the word constraints of this article, can be seen increasingly in modern medicine and how they have precipitated a crisis in medicine’s properly holistic nature.

EBM codifies the new scientism in medicine

The advent and rise of EBM codifies the modern scientism in medicine, then, and demonstrates all of the characteristics of scientism: radical reductionism, the privileging of the scientific method and inquiry above all others and a marked tendency to totalitarianism, even microfascism [8–22,43,44], explaining in large measure the modern antagonism in medicine to holism. Leggett is clear that the form of scientism we are now able to see in medicine may be defined as: ‘an approach to medical practice that regards the scientific understanding of the disease as the only relevant issue, while ignoring other factors’ [27]. Such a thesis, surely, leads directly to the assumption that what is right for the disease is automatically right for the patient, representing a fundamental misunderstanding of the relationship between the partial nature of the disease and the totality of the person. EBM, being predicated on such reasoning, provides a major, if not *the principal illustration*, of where medicine has ‘gone wrong’, threatening to disturb the character of medicine as a practice

which necessarily employs both science and art, by demanding a primacy of the biomedical paradigm and promoting the fallacy of the ‘hierarchy of evidence’ as fundamental to modern medical theory and practice [9–22].

Evidence-based medicine’s over-reliance on science in clinical practice, especially the place of scientific data derived from the methodologically limited study designs of the randomized controlled trial, meta-analysis, and meta-analysis, represents not only an inadequate appreciation of the power of alternative sources of knowledge for clinical practice, but also a frank *fetishisation of science*. In fact, EBM has demonstrated *real scientism*, indeed a *scientistic fetishism* that exalts probability values, denigrates clinical expertise and which reaches its orgasm in the cumulative meta-analysis of randomized studies [20]. In this way, EBM actually promotes *bad* rather than *good* clinical medicine by claiming that it alone represents the true epistemic voice of medicine, while at the same time utterly failing to represent medical knowledge adequately and excluding the human interpretation that constitutes the fundamental basis of the historic mission of medicine [45–48]. As I have argued previously, not all questions relevant to clinical decision making are scientific in their nature and these therefore cannot be answered by science. Science cannot, therefore, provide the basis for good clinical practice in any fundamental sense [11]. Good clinical decisions are typically made through a plurality of means and are formulated with what might be termed the ‘evidence of the clinic’, constituted not solely by scientific data, but from a variety of other sources including raw clinical experience, complex patient biography, a ‘telling phrase’, even an ‘inadvertent gesture’ [49]. The idea that the technique of EBM could be used to determine the extent to which a physician’s practice was based on ‘cold’ scientific data and then to judge one physician’s practice as ‘evidence-based’ and another’s as ‘non evidence-based’ was always an intellectual and clinical absurdity destined to obscure excellence in clinical practice, rather than to identify and illuminate it [11,20]. Data derived from epidemiological studies are data only and they require contextual interpretation by expert clinicians and integration into a much larger theoretical base for such information to become a contribution to medical knowledge that may or may not be applicable to the individual case [50]. Tobin is clear on this point and elegantly illustrates not only the intellectual absurdities of EBM, but also its capacity to cause harm to patients [51,52].

The core concepts of EBM therefore worsen the crisis in medical holism, not diminish it and the poverty of EBM in assisting a return to a properly humanistic medicine for the future is seen in its inability or refusal to emerge from the epistemic cage of ‘biomedicalism’ [53], risking, through its foundational and continuing positivistic reductionism, the description of *empiricist quackery* [54]. If that is how the leaders of EBM wish their ‘screaming baby’ [11] to be immortalized within the History of Medicine, and if they wish for themselves to merit the description of *empiricist quacks* rather than as scientists who were eager to engage with their critics in the pursuit of knowledge through reason, then so be it. Certainly, their recent attempt to defend their creed against scientism and to generate a philosophically tenable explanation of their reasoning [55] has been summarily dismissed by a series of devastating analyses and critiques [25,56–61].

How can we put medicine right again?

Weatherall, former Regius Professor of Medicine at Oxford University, writing in the current Oxford Textbook of Medicine, is clear that:

‘modern medical practice, with its increasingly reductionist approach to the study of disease, has tended to focus attention more on disease mechanisms than on those who are suffering from the diseases that fascinate us so much. We must address this balance and return to a more holistic approach to medical care without allowing ourselves to develop those uncritical attitudes and reliance on received wisdom that permeated the medical profession for so many centuries’. [62]

Weatherall agrees, then, that medicine has become far more interested in diseases than in the people who suffer from them. Certainly, it is increasingly easy to observe a growing number of doctors in Western health services who view the person of the patient as an irritating distraction between themselves and the disease they are attempting to treat. To ‘put medicine right again’ we must therefore correct this highly negative development and address how the accumulated and accumulating science base of medicine can be applied to the care of patients through the proper practising of the arts of medicine and not in isolation from them. Because the arts of medicine have become progressively *disintegrated* from clinical practice as the scientism of medicine has advanced, it is clearly necessary to *reintegrate* these devalued techniques back into routine clinical practice and as soon as possible. Indeed, the urgency with which this must be done is increasing as a function of the increasing scientific nature of medicine and the almost daily advancements in its science base. We need only take one example of these, personalized medicine, to illustrate the general point. Personalized medicine [63], while it offers tremendous potential for individually tailored care based principally on the genomic profile of the individual, by adding so powerfully (and necessarily) to the science base of medicine, could have the adverse consequence of exacerbating the art deficit as the excitement it generates in scientifically personalizing and dictating specific interventions risks concentrating all clinical attention upon the given disease to the exclusion of *the person* presenting with it. Here, as so often in modern medical practice now, it is the intervention that is made personal to the disease and not the relationship made personal between doctor and patient, so that the disease is seen as the whole and not the patient acknowledged as such. It is easy to see, then, how Leggett’s definition of medical scientism becomes immediately applicable here [27].

What is the way forward?

Putting Medicine ‘right again’ by moving away from scientistic reductionism in clinical practice in the direction of a properly holistic approach to care is urgently necessary, because a medicine based on science alone is a radically incomplete form of clinical practice that serves neither patient nor doctor well, impoverishing both in large measure. Scheurich [64] has noted that medical practice has become a ‘fairly positivistic and soulless discipline overall’, needing quickly to re-learn what it has forgotten in a century of empiricism. Indeed, Tournier, who I have considered at length elsewhere [26], at no point denied the usefulness of efforts to synthesize a greater scientific knowledge of man, but was clear

that however successful such efforts were, they would reveal only one side of man's nature – that of his mechanisms. For Tournier, such knowledge was of itself incomplete as a basis for clinical practice and would need to be augmented with a personal knowledge which is of a different order – the order of the person, not that of things. This knowledge Tournier believed to be within the reach of every clinician, 'be he an ordinary general practitioner or a learned specialist' [65]. He deplored a medical practice based on bioscience alone, considering it a 'dangerous activity', 'lacking the integration of body, mind and spirit necessary for health and wholeness'. For him, illness raised two very different sorts of questions – scientific questions and spiritual ones, so that for Tournier, the whole of medicine was summed up by an imperative to help men to live well and then to help them to die [66].

Medicine must, with reference to such philosophy, remember, then, that health, sickness and suffering involve the 'essence of the human being' and that health care professionals are called to care for the *whole person*, in all his integrity, such that service of the sick 'embraces all of the dimensions of the human person: physical, psychological, spiritual and social' [67]. It is therefore vital that the care of the sick is considered and enacted from a humanistic as well as from a technical perspective. As Puchalski [68] emphasizes, an emphasis on cure or disease relies primarily on the scientific model of care with a focus on healing or illness bringing the patient and physician into a clinical context. When arriving at this point, the patient's wishes, beliefs and values play an immediately important role in decision making and in the formulation and operation of the treatment plan. Puchalski is clear that the clinician's ability to form a compassionate relationship with the patient is as important as the clinician's ability to diagnose and treat the patient scientifically. Typically, conversations with the patient about his values, needs and worries, transform the clinical encounter and are readily achievable within explicit ethical parameters. To be effective, clinicians must not only address the disease but also know the patient as *a person*. In understanding the inseparable connection between body, mind and spirit, doctors have the capacity to rediscover the insight of Hippocrates [69–71] – and should do so. In referring to Hippocrates, let us turn also to Plato: 'as you ought not to attempt to cure the eyes without the head or the head without the body, so neither ought you to attempt to cure the body without the soul . . . for the part can never be well unless the whole is well' [72].

Education of medical students and doctors

How will holism be returned to medical practice? First and fundamentally, existing doctors and certainly those in training must be taught the limitations of the biomedical paradigm as well as its strengths. Montgomery is clear, and I wholeheartedly agree, that it should be inculcated in students *that science is a tool of medicine and not its soul* and that, within a formal moral framework, students should be taught how to act wisely for the good of the patient in what is an uncertain field of knowledge. Indeed, as Bertrand Russell has said in a more general context, 'the central problem of our age is how to act decisively in the absence of certainty'. Here, the development and exercise of *clinical judgement* is fundamental [2,3,73,74]. While doctors employ the scientific or hypothetico-deductive approach, they also utilize the practical or interpretive and narrative approach, so that while clinicians rely in consider-

able measure on biological understandings of disease, it is the application of scientific knowledge in a rational, science-using process that characterizes the work of a doctor [2]. This fact should never be lost sight of and taught constantly. Indeed, biological knowledge, which is typically general, variable and evolving is, by its very nature, limited in the care of individual patients, so that it can never be directly applied in a technical or formulaic manner.

While scientific generalizations play an important part in the practical reasoning of medicine, 'neither biological facts nor epidemiological probabilities go very far alone' [2]. General truths therefore require particularization to the individual (just as in Law and Moral Theology) through careful interpretation and the exercise of judgement in what are frequently varying, changing and incompletely specified circumstances. Doctors do not reason, therefore, as scientists do and, for the reasons given immediately above, neither should they try to within the clinical encounter. As part of good clinical practice, clinicians should always consider the merits of substituting 'top down', deductive, scientific methods of reasoning for case-based reasoning, remembering that case narration remains an important means of thinking and remembering – of *knowing* in clinical practice. As with scientific knowledge, students should be taught the limitations as well as the strengths of narrative-based medicine, avoiding, as with scientific knowledge, an over-reliance on narrative evidence, but appreciating the intrinsic value of the patient's story in understanding key elements of the individual case and in providing a form of accumulating insight and knowledge for subsequent use [45–48,75,76].

Avoiding the dichotomization of medical practice

Currently, a growing dichotomy can be seen in medical practice, such that it is possible to observe a reductionist, often scientific form of practice versus a broader, holistic model. Patients have always been able to recognise, readily, a caring doctor from an uncaring one, but the advent of so-called integrated (ive) medicine in recent times, which argues for the use of complementary and alternative therapies alongside orthodox treatments and emphasizes a compassionate, relationship-centred model of care [23] is widening this gap, perhaps even formalizing it at the present time. For my part, I think the emergence of a new dichotomy of 'holistic practitioner' versus 'non-holistic practitioner', rather in the manner called for initially by EBM of an 'evidence-based practitioner' versus a 'non-evidence-based practitioner' [77], while deliciously ironic after the dominance of EBM in recent times, would nevertheless represent a highly negative development in modern health services. The answer to 'putting medicine right again' is therefore not the development of new educational courses outside of the medical curriculum aimed at creating 'holistic practitioners' alongside 'standard' ones, but surely the introduction of enhanced teaching of the philosophical and methodological basis of medical holism within the existing undergraduate and postgraduate curricula. In this way we will avoid not only the dichotomy of practice to which I refer directly above and which is becoming a dangerous reality within modern medicine, but we will also be far better placed to regulate the content of what is taught about the nature of holism, rather than relegate such freedoms to incompetent higher educational establishments and/or to self-interested groups.

Until this development takes place within the traditional and well-regulated medical curricula, there will of course continue to be a place for the development of postgraduate diplomas and higher degrees which teach, in a competent and analytical fashion, the principles of holism in health care. Even following a much hoped for developing of the undergraduate and postgraduate curricula in the way I have described, nothing prevents the development of higher degrees which examine in particular and highly detailed fashion the individual components of holistic care as part of an advanced and highly specialized study. Such is the academic nature of medicine and the essence of specialism, but we must guard against the development of two distinct models of medical practice at all cost.

Educating patients in the limitations of medicine

Given that patients increasingly demand clinical certainty and where they remain intolerant of clinical error, a more accurate understanding that medicine is not a science, that it is not replicable and certain, but rather imprecise and fallible, would lower the expectations of patients and would enable doctors to be more honest about the limitations of their trade. In reality, the fundamental misrepresentation of medicine as science has a contrary and directly negative result – it ‘conceals’ or certainly obviates discussion of, the human and fallible nature of medical practice with largely predictable results – one of which is the increase in malpractice and negligence claims and another in the rise in health care quality improvement and risk management programmes to which I have already referred earlier. As patients are increasingly demanding a more caring and holistic medical practice, in addition to one based on accepted science, the provision of treatment in a holistic manner, while at the same time educating patients in the limitations of medicine as a practice in general, would therefore do much to consolidate the relationship of, and contract between, Medicine and Society.

Abandoning the scientific reductionism of EBM

Practising holistic medicine will necessarily involve the abandonment of the core tenets of EBM. That medicine should be informed, and not dictated to, by its accumulated and accumulating science base demonstrates *the fundamental irreconcilability of EBM with good medicine*, despite EBM’s absurd and hubristic attempts to equate itself with good clinical practice as if the two were synonymous and coterminous. It is errant nonsense to suggest the two are equatable. Sir Douglas Black, for example, was clear on this point over a decade ago when writing in the *Journal of the Royal College of Physicians of London* and little has changed since [78]. The serial conceptual and methodological reconstitutions of EBM in the face of philosophical and clinical analysis and critique have represented the results of efforts by the advocates of EBM ‘to square a circle’. Strikingly, the latest treatise to emerge from the EBM community in an ultimately unsuccessful attempt to validate its overall creed [55], admits overtly and specifically that the need to integrate patients’ values and preferences into clinical practice, when these oppose the selection of treatments indicated optimal by medicine’s science base, is a ‘vexing issue’ (!). The protagonists of EBM find the issue ‘vexing’ precisely because they are unable or unwilling to counte-

nance the idea that the science base of medicine should be prevented from dictating treatment decisions. For them, patients’ values and preferences derived from their fears, hopes, anxieties, socio-cultural context and faith or spirituality must take second place to ‘the evidence’. This is not the *integration* of preferences and values into clinical decision that they talk of in their constantly changing definitions of EBM and to which they continue to pay lip service only, but rather the *subordination* of preferences and values to ‘the evidence’ and therefore a direct formula for the violation of patient autonomy. This notion and practice cannot be described as good medicine, it is, in fact, the antithesis: arrogant, paternalistic, reductionist, unethical and totalitarian – *and formally scientific*. It is for this reason that I argue that the rejection of the core tenets of EBM within clinical medicine is a fundamental prerequisite for a return to holism in medicine, an imperative which patients increasingly demand.

Conclusion

The slide by many of the leaders of modern medicine into a positivistic reductionism, leading to the embrace of scientism in medicine, is well characterized as *empiricist quackery* [54] and rightly leads to the description of the practitioners of a non-holistic, scientific medicine as *empiricist quacks*. The current nature of medicine, heavily influenced by EBM, which in itself formally codifies and embodies the modern scientism in medicine, has resulted in a radically incomplete form of clinical practice that benefits neither practitioner nor patient and which has interrupted medical progress. Putting medicine ‘right again’ will therefore necessitate an urgent and fundamental reappraisal of the nature of knowledge for clinical practice and an appreciation that by no means all of the knowledge centrally necessary for effective clinical practice is scientific in its nature. Suck knowledge is not unscientific, but rather non-scientific. Doctors should therefore combine great scientific competence with a great heart [79]. Indeed, medicine, while certainly continuing to refer closely to an ever-expanding scientific knowledge base, remains fundamentally a human experience and must draw increasingly on the dynamic hermeneutic interaction between physician and patient, so that the information required to choose optimal therapy may be gathered and integrated [80]. This complex nature of medicine as a practice employing both science and art, indicates the necessity to integrate both of these sources of knowledge and expertise, avoiding a preferential concentration on scientific data alone with a consequent neglect of all those other vital aspects of good medicine which remain central to the work of the good doctor. Those that promote scientific medicine and those that emphasize the importance of applying science to patients within a framework of the arts of medicine must therefore come together in a spirit of reconciliation. The real conceptual divide is not between the science base and the arts base of medicine, but rather between a complete form of medical practice and an incomplete one [24]. I will also go so far as to say here that while we must remain properly, indeed highly, cautious of therapies which do not appear to have a biologically or mechanistically plausible basis for clinical practice at the present time, we must consider that a detailed understanding of how such therapies may well be working might only be a matter of years away. Doctors, with this in mind and reflecting upon the nature and pattern of discovery that we have witnessed within medical history

and tradition itself to date, would therefore do well to refrain from absolutist dismissal of many of the modalities advocated by complementary and alternative medicine practitioners for integration into orthodox practice. Integrated (ive) Medicine represents one of many experimental approaches to medical holism worthy of detailed investigation in terms of its ability to satisfy patients' beliefs and preferences and given the many positive results it has recorded in terms of patient self-reported and independently observed clinical outcomes and should be critically evaluated alongside all of the others. Here, the selection of established research designs, or the development of research designs *de novo*, must take into account the nature of the questions to be asked and must not imagine that the only research questions worth asking and answering are those that can be tested through randomised controlled trials and other biomedically reductionist, quantitative tools. Not to appreciate the same would be scientific *non-science*.

By appreciating the limits of biomedical science in the care of individual patients and by re-integrating the essential arts of medicine back into practice, including the use of compassion, consolation, empathy, insight, discernment and intuition, by listening and explaining, by being fully present to the person of the patient, by placing emphasis on relationship and by encouraging an ethical intimacy, by providing reassurance, by addressing hopes, fears and anxieties, by providing psychosocial and spiritual/religious care [26], by attending to the cultural context of the person, by noting the effects of diet and the environment on health and recognizing the role of family, friends and significant others who provide the emotional fortitude we have come to call 'support', *in parallel and in full integration with scientifically informed strategies to ameliorate, attenuate and cure*, we can move from a version of modern medicine that has become radically incomplete, despite staggering scientific progress, in the direction of a medicine which is concerned with *people*. This approach would enable medicine to be exercised in a fully contextual manner, making a *Medicine for the Whole Person* a perfectly attainable ideal. Having commenced this Essay with a playful reference to Denzinger, I conclude with one entirely more profound from Voltaire:

'Men who are occupied in the restoration of health to other men, by the joint exertion of skill *and humanity*, are above all the great of the earth. They even partake of divinity, since to preserve and renew is almost as noble as to create'. (italicsisation mine)

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