

The impact of materialistic monism and suffering on medical students: A critique of the biomedical and biopsychosocial model of medical schools.

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**I, the undersigned *Jan Kuehne*,
hereby declare that the work contained in this thesis is my own
original work and that I have not previously, in its entirety or in
part, submitted it at any university for a degree.**

Signature

Date

ABSTRACT

On entry to medical school, students are confronted with a worldview that can be typified as materialistic monism. The student progressively becomes a materialistic monist, not only because of the teaching, but also because medical schools fail to address the question of suffering. One would expect the biopsychosocial model to surmount the limitations of the biomedical model, but it in itself has to deal with both suffering and materialistic monism. Suffering cements the collapse into materialistic monism in the way the student practises medicine. What life strategies would transcend this materialistic monism? This thesis examines potential educational interventions that might help the student to analyse the philosophy of medical school and find ways of dealing with the question of suffering.

ABSTRAK

Met toelating tot mediese skool word studente gekonfronteer met 'n wêreldsiening wat as materialistiese monisme beskryf kan word. Die student verander progressief in 'n materialistiese monis, nie slegs as gevolg van die onderrig nie, maar ook omdat mediese skole nie daarin slaag om die kwessie van lyding aan te spreek nie. 'n Mens sou verwag dat die biopsigies-sosiale model die beperkinge van die biomediese model sou oorkom, maar insteede moet dit self beide lyding en materialistiese monisme aanspreek. Lying moedig die verval in materialistiese monisme in die wyse waarop die student geneeskunde beoefen aan. Watter soort lewensstrategieë is nodig om hierdie materialistiese monisme te transendeer? Hierdie tesis ondersoek die opvoedkundige intervensies wat die student kan help om die mediese skool se filosofie te analiseer en wyses te vind om die kwessie van lyding te hanteer.

Dedication

To all those who lectured us in our course at the University of Stellenbosch

To Khumisho, Thierry, Nico, Adelaide for guidance and input

To Dr Hannes Steinberg who helped make it possible.

To Jacques Kriel and Sam Fehrsen for stimulating me to think about these things

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To my English Editors who translated my English!

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FOREWORD

The philosophical exercise of writing this mini-thesis was to document my observations when dealing with Christian medical students. I do not pretend to be an expert on the thinking and behaviour of medical students. However, my close association with the Christian Medical Fellowship for the past five years has afforded me the opportunity to observe the basic behaviour and ways of thinking of Christian medical students throughout South Africa. I suspect that these basic behaviours are not restricted to Christian medical students and might well be displayed by all medical students.

My contention is that medical students are made to focus on the concept of healing to such an extent that the meaning of suffering is seldom, if ever, addressed. No matter the medical student's ideology, worldview or philosophy of life, at some time they will be forced to confront this issue. I have characterised the ideology/philosophy of the medical schools as materialistic monism – that matter is the ultimate and only reality, which excludes the supernatural or a deity. However, this does not mean that I am a theist intent on changing medical schools' approach to include a belief in God. Rather, my intention is to understand the nature of medical schools in terms of their form and function. I believe that the recent changes in medical curricula in South Africa and the acceptance of more holistic models of teaching, such as the biopsychosocial model, are vital to our country's ability to produce better doctors. With the advent of the HIV/Aids epidemic, the challenge to provide more holistic care has increased. So this philosophical study attempts to look at how the meaning of suffering relates to the medical schools' philosophy and mode of teaching, and how the medical student responds to this.

CHAPTER ONE

INTRODUCTION

A great pianist must, at the proper time, concentrate all possible attention on the precise detail of finger movements. But if she attends to these alone while playing a sonata at a concert, the result will be disastrous. While she plays, all her mind and soul must be wrapped up in the glory of the music, completely forgetting the finger work. And yet she will lose the glory of the music if she has not done the finger work. (Newbigin 1997:57).

1.1. Medicine as both science and art

Where the science of medicine enables us to understand the workings of a human body, the art of medicine is to remain conscious of the human who inhabits the body. The challenge for a doctor is to consistently apply the science of medicine, while not losing sight of the greater complexity of what it means to be human. Traditionally, the patient's health has been the central concern of the doctor. The goals are: to prevent; to cure; to treat disease; to alleviate pain and suffering; and to rehabilitate any disability the patient may be experiencing (Cassell 1991). These have commonly been ascribed as the goals of medicine. All these goals can be related to the concept of suffering (Cassell 1991). Medical education endeavours to train the doctor to meet the goals of medicine.

It has been asserted that a medical student's medical training shapes their conceptual understanding of the patient, with the effect that it dehumanises the patient (Illich 1976; Pellegrino 1979; Engelhardt 1986; Meilaender 1995; Tauber 1999), due to the science of medicine (Polanyi 1958; Pellegrino 1979; Engelhardt 1986; Kriel 2002) and the failure to address suffering (Hauerwas 1990; Cassell 1991; Spiro 1996).

This thesis will seek to show conceptually how the ontology of the natural sciences (i.e. materialistic monism) and the suffering observed by the medical students during their medical training influence their understanding of the patient. These conceptual studies could lead to empirical studies in the future.

1.2. Central Propositions

The central propositions that I present as a guide this enquiry are:

- a) Jacques Kriel asserts in *Mind, Matter and Medicine* that the underlying ontology of the 'biomedical' model of a medical school is materialistic monism. Another philosopher, Cassell, asserts in *The Nature of Suffering and the Goals of Medicine* (1991) that the 'biomedical' model of medical schools has failed to address the concept of suffering and has limited it to a material understanding. I will argue that what both Kriel and Cassell have contributed to the conceptual understanding of a patient has been 'reduced' or 'collapsed' to a purely material entity in the mind of a medical student.
- b) Since both Kriel and Cassell wrote their books in an era when the 'biomedical' model dominated, I will apply their assertions to the 'biopsychosocial model', which has since become the dominant paradigm. I argue that if the underlying ontology of a modern medical school based on the biopsychosocial model has remained materialistic monism, then Kriel's assertion would hold true for the biopsychosocial model as well. Also, if the biopsychosocial does not address the concept of suffering, then Cassell's assertion would also hold true for the biopsychosocial model. Then one would expect that a medical student's view of the patient will also be 'reduced' to a material understanding of health. In other words, the ontology remains materialistic monism even though a more 'holistic' approach is being advocated through the biopsychosocial model. If Kriel's and Cassell's arguments hold true for both the biomedical and the biopsychosocial model, then the envisioned training of 'holistic' doctors will not occur. Then the biopsychosocial approach, albeit an improved epistemological approach, will have the same results as the biomedical model, in that it has the potential to dehumanise the patient, and thereby no longer equip the medical student to practise the art of medicine as well as the science.

Based on Kriel's and Cassell's analyses of the state of modern medical schools, I will use three case studies (or 'episodes') to describe the conceptual framework of reality that the present-day medical student has of his/her patient, as he or she 'develops' through medical

school. I will attempt to show how, in the ‘mind’¹ of a medical student, the development of a dualistic understanding of a human being starts on entry to a medical school – a dualistic understanding that is expressed in terms of a mind-body dichotomy. Subsequently, on graduating from medical school, the medical student has acquired a materialistic monist understanding of the patient. It is to conceptualise this transition from dualism to materialistic monism that I have coined the term ‘collapse’. The case studies aim to outline pragmatically how the metaphysical orientation of medical school shapes the medical student to have a materialistic monistic ontology (as Kriel argues), and how, as a result of the medical student not necessarily being equipped to deal with the nature of suffering (as Cassell argues), that he or she actually avoids the suffering, and a ‘collapse’ occurs in the mind of the medical student.

1.3. Terminology

In this thesis, ontology is used to denote the nature of being as well as one’s understanding of the nature of reality. This includes issues such as whether a human being is just a physical body or a complex irreducible entity, i.e. spirit-soul-body. In materialistic monism, the only acknowledged reality is the reality that is understood by traditional Western science, that is, matter and energy. Materialist monism therefore does not include a ‘supernatural’ dimension. A ‘holistic’ approach to reality, on the other hand, would consider life or the nature of being to be an integrated framework of multiple dimensions, thus spirit-soul-body. However, this concept of spirit-soul-body could be reduced to separate conceptual blocks, and thereby lose its ‘emergent’ properties (Cilliers 1998) of a complex system.

Dualism is an example of an ontology that has separated the mind and body into two distinct yet connected ‘real’ entities. Epistemology relates to the study of knowledge, including how it is acquired and communicated. Of special relevance in this thesis is how ontological understanding shape the way knowledge is transferred – in other words how ontology shapes epistemology. Traditionally, the epistemology of medical schools was called the ‘biomedical’ approach, but recently (since the 1980s) a newer epistemological approach – ‘biopsychosocial’ – has come to the fore. The biomedical model is characterised by a curriculum that divides medical training into neat blocks of information (e.g. anatomy, chemical pathology, and psychiatry), which focuses mainly on the physical aspects of the patient. The biopsychosocial model seeks to integrate the teaching of the biological,

¹ The term ‘mind’ is used in this thesis to denote the cognitive and rational abilities of a human being, and the ability to think in the abstract.

psychological and social dimensions into all aspects of medical education, by integrating all the information from all medical fields, e.g. anatomy, chemical pathology, and psychiatry. This means that medical training at undergraduate level is envisioned to be more integrative, and therefore cover a broader base. Specialisation at postgraduate level, however, will still occur.

1.4 Outline of the dissertation:

Chapter 2 deals with Kriel's assertion that the ontology of modern medical schools is materialistic monism. The focus in this chapter is the section of Kriel's analysis in which he explains how dualism has collapsed into materialistic monism as seen throughout the history of medical training. When cardiologists are trained at medical school, they need to know the anatomy of the heart. When psychiatrists are trained at medical school, do they learn the anatomy of the mind, or the anatomy of the brain? A medical student trained in psychology would have a better chance of addressing a patient non-materialistically than a medical student trained in psychiatry. However, this does not necessarily mean that we have answered the question: what is the mind? Is it a separate entity, as viewed from a dualistic perspective, or is it simply an epiphenomenon of chemical reactions in the brain as viewed from a materialistic monist's perspective?

Chapter 3 is divided into two parts: a conceptual analysis of suffering and the failure to address suffering from a non-physical point of view. The conceptual analysis of suffering relates the concept of suffering to the goals of medicine, words related to suffering, and dimensions of reality. The failure to address the concept of suffering relies heavily on the views put forward in Cassell's book *The Nature of Suffering and the Goals of Medicine* (1991). In his book, Cassell examines the social and cultural forces that encourage a medical epistemology that is governed by the biomedical model. More specifically, this chapter discusses Cassell's comments on the biomedical model, which he believes discounts the impact of illness on the patient and ignores the suffering that the patient is experiencing, and is limited by focusing only on the disease itself. Cassell does not reject the value of science, rather he sees it as part of the moral enterprise of medicine to help patients. The ability to provide compassionate care to the patient is what is envisioned by medical education. His prognosis for modern medicine within the biomedical approach, however, is poor: "The test of a system of medicine should be its adequacy in the face of suffering; this book starts from the premise that modern medicine fails that test." (Cassell 1991:vii)

Chapter 4 discusses the implications for the biopsychosocial model in depth. Until suffering is understood in non-materialistic terms using a non-materialistic ontology of the patient, medical students will continue to address the patient ‘materialistically’ as he/she progresses through the modern medical school curriculum. The ‘high road’ is that the biopsychosocial model addresses the concerns of Kriel and Cassell and that medical training produces ‘holistic’ doctors. However the ‘low road’ is that the biopsychosocial model does not meet expectations because it does not attempt to include a metaphysical understanding of reality of the human body (i.e. ontology), nor does it address the concept of suffering and how to avoid it. Rather the biopsychosocial model is a methodology (i.e. an epistemology) that is being inculcated into medical students. Since the biopsychosocial model does not address the underlying materialistic monism of medical schools, it will eventually be understood only within the conceptual framework of materialistic monism. In HIV/Aids for example, HIV/Aids remains ontologically a ‘material’ problem, even though the biopsychosocial approach can articulate certain ‘bio’, ‘psycho’ or ‘social’ needs; all these aspects are still articulated in ‘materialist’ ways. The example of HIV/Aids also highlights the concept of suffering. The medical schools would surely also need to include in their curricula, how different understanding of suffering influences the medical students’ perceptions of suffering and patients, as they cope and ‘develop’ through their medical training. Their ontological understanding of the patient will shape how they will eventually treat their patients.

Chapter 5 applies the assertions of Kriel and Cassell to a case study in which a medical student’s exposure to three ‘episodes’ is analysed. The focus is on how exposure to a particular educational approach and the patients’ suffering influence the thinking of the medical student, resulting in the medical student’s ‘collapse’ into a materialist monist understanding of the patient. This chapter then discusses how the mechanism of this collapse could be understood philosophically, as a collapse that can be attributed to the failure to address the question of suffering in a non-material dimension.

Figure 1.1 in Chapter 6 pictorially summarizes the central themes of this thesis.

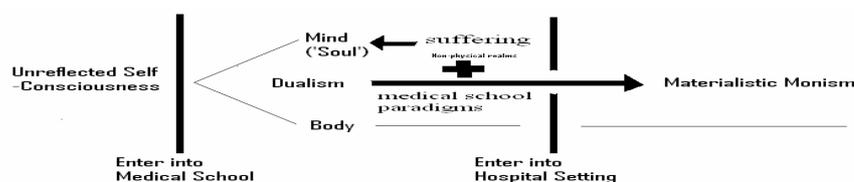


Figure 1.1: Timeline of the ‘development’ of a medical student’s mind as they progress through medical school

Having discussed the dynamics that influence the modern medical student's approach to the suffering of patients, Chapter 6 then discusses the issue of introducing educational interventions into medical schools in South Africa to address these dynamics. This discussion continues with a critique of the modern worldview and deeper discussions on suffering and how it affects us. The discussion ends with a fundamental question – in light of its monistic monism, and the difficulty it has encountered in addressing the question of suffering, can modern medicine truly be holistic? If yes, how so? If not, why not? The biopsychosocial approach attempts to overcome the limitations of the biomedical approach, but has it achieved its aims? If not, does its failure to do so indicate that modern medical practice inherently requires a monistic nature to function, and cannot overcome this fact?

In conclusion, there are recommendations on future empirical research, education initiatives, and the potential for further investigation into and contemplation of non-reductive and non-materialistic ontologies.

CHAPTER TWO

Kriel's Analysis of the Ontology and Epistemology of a Modern Medical School

Descartes' dualism has been collapsed into a materialistic monism.

(Kriel 2000:23)

In his book 'Matter, Mind and Medicine', Kriel (2000) discusses transforming the ontology and epistemology of modern medicine. . He relates how medicine thinks of itself as a natural science, and that this understanding of natural science has come to dominate medical schools. He argues that medical schools are now in need of transformation in order for medicine to overcome its limitations so that it can address the 'the full reality of the patient in health and illness' (Kriel 2000:xxviii). Kriel hopes that there will be a transformed clinical practice that 'strives to be both scientific and humane' (Kriel 2000:xxviii).

It could be argued that Kriel's analysis has become outdated with the advent of curriculum changes in medical schools – moving away from the biomedical model to the biopsychosocial model, from knowledge-based learning to problem-based learning and patient-based learning, from reductionistic epistemological approaches to integrated epistemological approaches, from teaching in a classroom to teaching in the clinic, and so on. Though his arguments could be considered to target the 'older' medical schools that are characterised by the biomedical model, certain salient points he makes will be used to analyse the potential success of the biopsychosocial model. So although the frame of reference in Kriel's analysis was the biomedical model, this thesis uses the salient points as the criteria for an assessment of the biopsychosocial model (Chapter 4).

Kriel relates how the "first philosophical identification of medicine with the natural sciences took place through the iatrophysical school – a school of medical thought in the 17th century that explained all physiologic and pathologic phenomena in terms of the laws of physics – supported, among others, by Descartes" (Kriel 2000:4). The concept of laws was enhanced by the popular acceptance of Newton's laws of motion, as postulated in his book 'The Principles² of Motion'³. The fruit of Newton's work was to contribute to a 'mechanistic'

² Philosophiae Naturalis Principia Mathematica, published in 5 July 1687

³ I wonder whether this alludes to the idea that Newton did not presuppose that his theory was an absolute fact but an axiom, which might explain his theological and alchemical³ studies. Newton, who is understood to have been a deist³, makes this comment: "Gravity explains the motions of the planets,

understanding of the world, a world that could be broken down into simpler constituent parts, like a watch being dismantled into all its pieces. This concept of laws not only influenced natural science, but spurred the Enlightenment thinkers to find these laws in other fields of study – Sociology, Economics, and even Ethics. That the world, as we know it, could be understood in natural and rational terms, formed the basis on which most of the thinking during the Enlightenment era grew: Locke in relation to politics, Adam Smith in relation to economics. Science became a ‘club wielded by the enlightened to batter the orthodox’ (Murray 1994:90). The simplicity of science became a way to challenge any supernatural metaphysical understandings, and hopefully reconstruct the world in what was understood to be a more comprehensive way. Numerous religious wars in Europe preceded the Age of Enlightenment, which meant that the Enlightenment project encouraged greater confidence in science and reason, which seemed a better way to build a safer world (Murray 1994:91).

One could consider this way of thinking as the beginning of a move away from the Aristotelian way of practicing medicine – disease was no longer understood as being in the humours but rather in a focal physical entity, which became progressively smaller (i.e. from organs to genetics). The Aristotlean concept was that all matter is made up of four elements – air, fire, earth, and water. Hippocrates used this concept to explain the health of his patients, whose bodies contained the four elements – blood, phlegm, black bile, and yellow bile (Rhodes 1976:16). When the four elements were in a state of balance one experienced good health; conversely, one would experience ill health if the four elements were not in proper balance. Galen (A.D. 131-200) (Rhodes 1976:20) promulgated Hippocrates’ ideas into medical treatment, which continued into the 20th century with procedures such as bleeding the patient to get rid of excess humours. So the concept of humours was not focused on an organ and so was not isolated from the rest of the body. The move to a focal physical entity occurred with physicians, such as, Laennec (died 1826) who would do autopsies on his dead patients and describe the pathology in the organs (Kriel 2000:3). In this way, the move from humours to organs as an explanation for disease had begun.

So, under the influence of Descartes and Newton, amongst others, human beings were seen as dualistic and their bodies were described as machines. A holistic being is a human being who

but it cannot explain who set the planets in motion. God governs all things and knows all that is or can be done."²³ (Tiner 1975). And another philosopher, [John Maynard Keynes](#), who collected Newton's papers on alchemy, mentions that "Newton was not the first of the Age of Reason: he was the last of the magicians."²¹ (Keynes 1972:363). Did Newton's interest in alchemy and theology contribute to this invisible ‘mysterious / esoteric / inexplicable’ force called gravity? If so, his conceptualisation of the ‘laws of nature’ were not absolute, so he called his book ‘Principles’ since he knew that he could not ultimately know the answer. So whenever he mentions laws, is the emphasis on a captial ‘L’ or is it a small ‘l’? This would be a very interesting discussion, but does not fit into the scope of this paper.

is not reducible to any smaller or constituent entity. Irreducibility would argue that the sum of the separate independent constituents does not equal the whole organism, since one cannot 'separate' the constituents absolutely, nor even conceive of these parts as being separate. Likewise, holism would view a human being as an enmeshment of various dimensions of reality: material, psychological, spiritual, in such a way that it is impossible to disentangle or separate the dimensions. However, dualism would argue that one can separate the human being into two separate constituents: into matter and into the nonmaterial entities of mind and soul. In relation to the ontology of medical schools, Foss and Rothenburg make this statement:

“Descartes’ dualism was fundamental in the development of science as it dichotomised the material and immaterial worlds, permitting the scientist to concentrate on aspects of nature more readily subject to experimentation and quantification. It thus formed – and in essence still forms – the essential background to empiricism. Gradually the emphasis shifted to the material aspects of reality so that the immaterial came to be seen as a derivative of the material” (Foss and Rothenberg as cited in Kriel 2000:17).

That which started out as dualism - the view that the mind and the body are made of a different substance – later developed into the idea of a body with the mind as an epiphenomenon of the body, which is a transition from dualism to a form of monism. Dualism was a necessary step in the process of understanding the human body, as Kriel states above. The perspective that dualism was a necessary step is collaborated by Illich (1775), Pellegrino (1979:47), Engelhardt (1986:207), and Cassell (1991:32), amongst others. This latter view which reduces the ontology of the human being to 'matter' (or energy) can be called materialistic monism. Both dualism and monism reflect a historical change in the perception of reality at medical schools since the time of Descartes and Newton to the present time. For the purposes of this thesis, it will be assumed that dualism leads to a 'collapse' into monism, but the mechanism through which this occurs is the subject of further research. The use of the term 'collapse' is contestable and could be described as a case of reductionism. However, this term gives weight to the fundamental paradigm shift that has occurred from dualism to materialistic monism. The term 'collapse' is taken from Kriel's book in which he illustrates the shift in the conceptualisation of the patient:

“...the patient is considered to be a biological organism which, as Descartes put it, will continue to function normally even if there is no mind in it at all. Descartes’ dualism has been collapsed into a materialistic monism. This

does not mean that all medical scientists and practitioners consider their patients to be simply biological mechanisms. But the scientific framework cannot accommodate the reality of the psyche and of the social realm, that is, the realm of consciousness.” (Kriel 2000:23)

As previously alluded to, both dualism and materialist monism can have a mechanistic view of the body. Both have also contributed in this way the tendency of clinical method and the epistemology of medical science and education to be mechanistic. Hence, this thesis attempts to show some linear philosophical ground for this transition from dualism to monism, although the actual mechanism of this transition or collapse is not detailed in the analysis. The dualism that contributed to the rise of science has now been replaced by monistic materialism (Kriel 2000:17), and is particularly articulated in what is regarded as the biomedical model in medicine (Kriel 2000:21).

The biopsychosocial model was introduced into medical schools in the late 20th century to correct the limitations of the biomedical model. However, it will be argued later in this thesis that the biopsychosocial model has failed to do that, with the possible exception of Family Medicine. Kriel (2000:7) relates that:

“...the understanding of science as ‘natural science’ has limited the clinical method, medical science, and medical education, because it has very specific implications for the central concepts of medicine, namely, patient, disease, and therapy. It focuses attention primarily, if not completely, on the physical aspects of illness. Because these limitations lie at the level of theoretical assumptions (worldview), the transformation of the clinical method to overcome these limitations is not a matter of more science, or more changes in the medical curriculum. It requires a foundational analysis (Foss and Rothenberg 1988) and involves a different understanding of natural science, as well as the nature of reality, and of human persons (consciousness).”

Kriel is arguing that we derive our epistemological methodologies at medical school from our underlying ontological assumptions. Ontology leads to epistemology. Kriel (2000:17) defines the ontological assumptions as: dualism, materialism⁴, reductionism, linear causality, and determinism. Science is situated within a worldview that requires certain assumptions of ontology and epistemology in order to be understood. If medicine’s ontology and

⁴ The terms ‘materialistic’ and ‘naturalistic’ are not wholly synonymous, but for the sake of this thesis, are used interchangeably.

epistemology is derived from the natural science construct, then it is necessary to enquire whether this is relevant to the interaction between the doctor and the patient, and what the consequences could be. As Kriel (2000:45) states:

”Emotions, attitudes, beliefs, values, and relationships may seem real to the patient, but to the scientific doctor they are subjective entities, with a secondary, derived reality. The underlying physical processes are the real processes that require scientific investigation and treatment. Scientific medicine shrinks the reality of the person to fit the scientific model, creating the human person in its own image... If we want to transform the science-based clinical method, it is not enough to appeal to doctors to be more sensitive to patients’ needs, or to train medical students in medical ethics and communication skills, or to slip in a social science course somewhere in the curriculum. We have to change our understanding of the nature of science.”
(Kriel 2000:45)

Following his metatheoretical analysis of modern medicine in terms of the biomedical model, Kriel then proceeds to analyse consciousness in a non-dualistic and non-reductionistic manner.

In this chapter, the changing ontology of medical schools in Western civilisation has been shown to change from humours to dualism to materialistic monism.

CHAPTER THREE

How Does the Question of Suffering Contribute to the Collapse from Dualism to Materialist Monism?

3.1. Conceptual Analysis of Suffering

3.1.1. The nature of suffering and the goals of medicine

As the root of the term ‘patient’ (from the Latin ‘to suffer’) implies, the relief of suffering has always been an integral goal of medicine. When a doctor makes a diagnosis or prognosis, this can potentially bring comfort to any suffering that the patient might be experiencing. But it can also increase the suffering, for example hearing a diagnosis of cancer. Treatment can cure or alleviate the problem, yet some treatments inflict degrees of pain or side effects in order to achieve a required result, as is the case with chemotherapy. Rehabilitation can attempt to restore as much of the patient’s engagement with society as possible, but might not remove how a society stigmatises a certain illness, for example the stigma that accompanies AIDS. Rehabilitation might also require a physiotherapist to push a patient beyond a critical pain threshold in order to restore mobility. Research can make wonderful discoveries to aid the advancement of medicine, and yet there are times that this advancement has resulted in research that has gone wrong or has been at the expense of animal suffering. Unethical research can also contribute to increased suffering. So, whether one is referring to diagnosis, prognosis, treatment, rehabilitation or research to fulfil the goal of medicine to alleviate suffering, these can paradoxically also increase suffering.

3.1.1.1 Words not commonly associated with suffering:

One seldom hears the words ‘reduce’ or ‘eliminate’ suffering. If someone has a gangrenous leg that requires amputation, the doctor is able to operate and eliminate the problem, but this has not eliminated the suffering. The ‘intactness of the person’ (Yunas 2004:8) has been threatened not only by the loss of the limb, but also by the stress of the events around the illness, which in this case presents as a gangrenous leg. The patient also suffers the consequences and broader implications of a lost limb. Therefore, it is only in the realm of

physical being that medicine can claim to have ‘eliminated’ the problem, but cannot claim to have done so in any other human dimensions that are affected by the illness. For example, psychologically the patient may experience fear that he/she will be unable to care for himself/herself. Even though the patient might have excellent social support structures, he/she will be experiencing various forms of loss. One does not hear talk of reducing or eliminating that loss. Socially, the ability of the patient to move about the community has been impeded and could potentially isolate him/her from social activity and limit his or her mobility even at home. Again, within the practice of medicine one does not hear talk of reducing or eliminating this isolation. Meanwhile perhaps the word ‘eliminate’ should become one of the words commonly used with reference to suffering in medical practice.

Another word not commonly used with suffering is ‘pleasure’. Can there be pleasure in suffering, as is found in extreme forms of masochism – although of course, a masochist is not suffering, since he is ‘enjoying’ the pain? Physical pain is a necessary but not essential condition of suffering. Is it possible that one could find joy in suffering, if one chooses the interpretation that his or her religious faith is being ‘tested’ by an illness? For example, James 1:2 in the Bible states: ‘Consider it pure joy, my brothers whenever you face trials of many kinds’ (New International Version). The understanding of joy here is not a fleeting emotional condition, rather it is a disposition that is positive despite the hardships.

3.1.1.2. Words commonly associated with suffering:

The use of the words ‘relief’ or ‘alleviate’ imply acceptance that suffering can never be altogether eliminated. This is because it is generally understood that, firstly, suffering will always be with us; secondly, that suffering (not only physical suffering) is inherent to the human condition; and thirdly that human beings can wittingly or unwittingly inflict suffering on one another.

Suffering and health are commonly juxtaposed with one another. One cannot address the question of healing without addressing the question of suffering. Suffering precedes the need for healing because without it, there would be no need for healing.

The World Health Organization defines health as:

“A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” (McWhinney 1997:180)

In other words, it includes in its definition of health both the presence of positive factors and the absence of negative factors. In our attempt to reach this envisioned goal – a utopia of health – the art and science of medicine need to attempt to understand the totality of what it means to be human. Science may not understand the meaning of suffering, but could attempt to investigate its impact. So it is left to the art of medicine to explain and deal with suffering.

3.1.2. Dimensions of Suffering

If a world-class pianist were to be involved in a car accident and lost an arm, the loss of the arm is permanent, and could be remedied with a prosthesis. This however, would never restore the complete functioning of the lost arm. Although physical pain would be part of the healing process, it would still be pain, including the phantom pains that make the remaining part of the arm feel as if it is still whole. Also, there may be post-traumatic stress from the accident. But the most significant impact of the accident would be how the pianist will never be able to play the piano again. Ultimately, the existential question ‘Why me?’ will also play a role as the pianist attempts to re-invent or rediscover meaning in life. Suffering therefore has many dimensions: physical, psychological, social, spiritual (existential), and more.

If a cure were found for Aids, this would almost validate a biomedical approach that deals with suffering only in the physical dimension. Then Aids could be eliminated. However, since we have no cure, Aids still has an impact on the other dimensions of the well-being of the patient. The intention at present is to ensure that the biological, psychological and social dimensions are all addressed through the biopsychosocial model. Science has always had a realm of ‘fact’⁵, that tries to explain everything in terms of causality, whereby it is understood that for every effect, there must be at least one cause. This allows for the possibility of controlling the situation – if we could deal with the cause(s), we could then eliminate the unwanted effect. If we can see evidence of these patterns of causality in the biopsychosocial dimensions of illness, the understanding is that we can exert a measure of control. We are then no longer puppets in an animistic world in which our ancestors attributed causality to a confabulated, mysterious (‘unmanageable’) spiritual entity, which means that suffering is fate and therefore uncontrollable. Modern man has attempted to understand and control causality in the biopsychosocial dimensions, while simultaneously also relegating the spiritual dimension to a non-real entity or at least an expression of the social dimension, unrelated to the material world. Modern man would see the handing over of causality to a spiritual dimension to be regression, not progression. If suffering can be reduced to a causal factor

⁵ Science is based on empirical facts that are ‘proved’ by the scientific method.

only in the physical dimension, then the solution need be located and addressed in only this dimension. But suffering involves much more than physical pain. Hence, by ignoring suffering in the other non-physical dimensions, we limit our ability to meet the needs of a patient holistically. Yet, suffering in its entirety is that which provides the health practitioner with the opportunity to know the patient as a whole, in all the dimensions in which they are suffering. If the goal of medical education is to produce ‘good’ doctors, it becomes a necessary requirement that medical students be trained to engage with every dimension of suffering. So instead merely focusing on reducing physical suffering, any attempt by the doctor to understand how the patient is suffering should result in the doctor dealing with multiple dimensions of the patient’s life, and their inter-relatedness. This would require extensive knowledge of life on the part of the doctor.

3.2. Failure to address suffering in the non-physical dimensions

3.2.1. Strategies to avoiding suffering

Cassell (1991:58-60) discusses four strategies that are typically used to alleviate suffering. The first is to live “entirely in the present because suffering requires anticipating a feared future”. The second is to alter suffering “by the development of total indifference to what is happening”. The third is total denial, and the fourth is a more opportunistic strategy called ‘flexibility’. For the purposes of this thesis, these four strategies are referred to as two strategies, since the first three collectively represent avoidance – avoidance of the future, avoidance of feeling and avoidance of reality. The second strategy represents engagement – a willingness to identify with suffering in all dimensions. As outlined earlier, the collapse into an ontology reflected by materialistic monism is not only compounded by the ontology and teaching methods of the medical school, but as the student progresses through medical school, he or she gets progressively exposed to more types of suffering with varying dimensions (e.g. from distributive justice issues to patients dying of HIV/Aids). Physical suffering, such as disease, can sometimes be addressed with medicine. However, there is a tendency on the part of medical students to avoid suffering in its non-physical forms, which makes suffering devoid of any meaning within a materialistic monistic ontology and further entrenches a monistic ontology within the mind of the student. The avoidance of suffering is integral to the collapse from dualism to materialistic monism. The focus of this section is on the avoidance strategy, whereas the engagement strategy will be addressed within the section that discusses the biopsychosocial approach in Chapter 4.

Why is there suffering in the world? What is the origin of evil? These questions can be very disorientating to some. The philosophical question is whether HIV/Aids is going to be like World War II or even the nuclear bomb, in as far as these events seem to have challenged the ontological assumptions of their time. Both World War II and the use of the nuclear bomb presented a challenge to the then prevalent presuppositions of modernism, which holds that man is inherently good and will build a utopia on earth. In a similar way, the HIV/Aids epidemic could challenge the underlying ontological paradigms of medical school. The ontology around modernity that lauded rationality failed to resolve the question of why rational men would inflict suffering on humankind as occurred during the war, and especially through the use of the nuclear bomb. Similarly the ontology inherent within a medical school's curriculum is unable to explain how a weak virus that can only survive in a living body can take 'advantage' of human sexuality and then cause one of the most heinous and slow ways for its host to die, when it could so easily be prevented from spreading. Notwithstanding all the technology available, we are still unable to conquer this virus. Since the major breakthroughs in medicine in the 20th century, such as the discovery of penicillin by Sir Alexander Fleming in 1929, there has been optimism around what modern medicine could achieve. Now at the turn of the century, we have still not conquered diseases such as malaria, and have to deal with new diseases brought on by lifestyle, such as coronary artery disease and outliving the usefulness of our physical bodies, as is the case with osteoarthritis. Whether pessimism is setting in or not is difficult to gauge, although stem cell and genetic research have injected some hope. It has been said that Europe entered the 20th century optimistically, but after World War II, it became progressively pessimistic. As a result new philosophical movements appeared, such as existentialism, which were precursors to what is considered post-modernism, which postulates that there is no absolute truth. The question is whether the impact of Aids, a problem particularly close to home, dampens any optimism of health care in our country. For instance, medical professionals are beginning to say "I became a doctor so that I could heal people, not to watch them die."

In dealing with the Aids epidemic, aspects of the first three of Cassell's strategies are evident. Living 'entirely in the present as suffering requires anticipating a feared future' can be argued to reflect the South African Government's health policy. Secondly, suffering that is 'altered by the development of total indifference to what is happening', could conceivably be the case for professionals having to run a poorly stocked clinic that is wholly unable to service the increasing numbers of patients. Thirdly, the strategy of denial is a real problem.

"People could find no place in their consciousness for such an unimaginable horror...and they did not have the courage to face it. It is possible to live in a

twilight between knowing and not knowing.” (W.A. Visser’t Hooft, a protestant theologian reflecting on the church’s knowledge of the Holocaust in 1973, in Cohen, 2001)

Conversely, because Aids suffering impacts so many dimensions of life, it also has the potential to create holistic doctors, as long as we keep to a strategy of engagement.

It appears that there are two arguments here. On one hand, through avoidance of the question of suffering we can reduce our concept of reality to materialistic monism: For example, in our failure to engage with and to articulate suffering in all its dimensions. We reduce an HIV/Aids patient’s suffering to a knowledge of his or her CD4 count. On the other hand, the inability to address issues of suffering may also cause medical students to start questioning the premise of the medical school’s ontological assumptions, in the same way people questioned the ontological assumptions around modernity after World War II. It is important to inquire whether and to what extent the notion of ‘rational men’ still significantly influences either social and/or philosophical theory. Foucault (1972) discusses the occurrence of epistemological ‘breaks’ and argues in fact, that it is ‘chance’ events that give rise to new epistemological assumptions in the world. In a similar fashion, due to the questions that materialistic monism cannot answer about HIV/Aids and the subsequent issues of denial around it, what could be referred to as an ‘ontological shift’ becomes possible in medical schools.

3.2.2.1 Avoiding a state of meaninglessness

One of the base propositions of this thesis is that the issue of suffering will always pose a challenge to materialistic monism as far as values are concerned. Consequently, whenever we attempt to address materialistic monism and suffering, we risk the onset of meaninglessness. It would be impossible to live within this kind of meaninglessness. Victor Frankl, the psychiatrist who survived the Nazi concentration camps, made the point that the victims’ ability to survive depended on their ability to find meaning in the midst of the suffering:

“Man is not destroyed by suffering; he is destroyed by suffering without meaning.” (Frankl 1984:136)

Without finding some meaning to suffering, how would one be able to answer the question “Doctor, if God is so good, why did He give me Aids?”

Do patients ask their doctors these questions? Perhaps the patients themselves expect doctors to be materialistic monists, whereas the work of the psychological aspect of the biopsychosocial model is to address the fears, beliefs and expectations of the patient within a patient-centred approach. While consulting a HIV/Aids patient, for example, does the doctor include in the history taking “How are you coping with your experience of suffering?” – *without waiting for the patient to raise the subject.*

If this question is considered as being too existential in nature, and hence inappropriate to bring up in the process of consultation, then how is it possible for the doctor to address the patient holistically? If the modern doctor cannot bridge these gaps, then he or she is bound to understand the biopsychosocial model through natural science filters, the way he or she was trained. The existential nature of suffering is a crisis for the patient, and is it one whose nature students should investigate. We also need to look into the ways in which the students would cope with this investigation. To start, one would need to find out whether students presently reflect on the question of suffering or is it something they completely avoid. This thesis argues that since students are not equipped to deal with suffering, they subsequently develop a tendency to avoid it, which in turn causes a collapse not only into materialistic monism, but also into a state of the meaninglessness in as far as medicine is unable to address suffering that is not physical in nature. Hence, it is also this state of meaninglessness that the medical student needs to respond to, and not just the question of suffering. This can be seen from the everyday comments made by medical students during the period when medical schools had both pre-clinical and clinical years. Students translated these into ‘pre-cynical’ and ‘cynical’ years at medical schools, owing to their state of disillusionment as they progressed through medical school.

3.2.2.2 Science as a coping mechanism

Could modern science be a coping mechanism for students who are unable to transcend the sense of disillusionment and state of meaninglessness around the practice of medicine? Engelhardt (1986:375) alludes to the idea that Nietzsche understood that modern science is a source of a state of meaninglessness⁶. Science in this regard is understood as a language that becomes a ‘modern security blanket for an unknowable existence’ (Simon 2002:9). In other words, science becomes a coping mechanism for the unknown. Science also aims to be the language that explains everything in absolutes, whereas art can be seen as aiming to disrupt this by allowing for a diversity of languages.

⁶ Original reference in article by Friedrich Nietzsche called ‘Aus dem Nachlass der Achtzigjahre’ in book ‘Werke in drei Baenden’ (Munich, Carl Hanser, 1960, Vol 3, Pg 882)

“Nietzsche ends by contrasting the abstract man of science with the intuitive man of art. The abstract man values knowledge as a defensive measure for avoiding and reducing suffering, while the artist creatively applies knowledge as a means to increase happiness. By consequence, the artist suffers and enjoys life more.” (Simon 2002:9)

Therefore the work of art that the artist creates is a new language: a new reality. However this requires dissatisfaction with the old language. Scientific revolutions have occurred with paradigm shifts, e.g. from Newton’s to Einstein’s physics, or from Einstein’s physics to quantum physics. Truth/factual claims are made contingent on the existing paradigm of reality. However, these truth/factual claims are relative when another paradigm of reality becomes understood. Since science is failing to answer what the basic construct of the material world is, the smaller and deeper we go in physical matter, the more complex it becomes and the less it obeys/is subject to the physical laws of material reality. Science may need to accept that there may not be one ultimate meaning, and in this way avert the onset of a state of meaninglessness, because failure to interpret the reality of one context, would be understood as making room for alternative interpretations.

A state of meaninglessness is arrived at by deconstructing the realm of reality. The deconstruction comes about by the ‘scientist’ (or medical doctor) either avoiding or reducing the complexity, i.e. the suffering of the patient to merely a material body. An artist, on the other hand, would be more likely to confront the suffering and apply a creative response to it, for example by helping the suffering patient find meaning in their suffering. It is suffering that brings about the existential questions of meaning and life and hence it is addressing the question of suffering that creates the opportunity for the medical student to transcend the natural science ontology. Either the medical student deals with her or his exposure to suffering by opting to reduce her or his experience of reality to a materialistic monism in order to survive medical school; or he or she can creatively engage suffering through other ‘non-medical’ and non-physical views of life - based on religion or other philosophies.

If the goal and result of scientific analysis were the reduction of life to a mechanical and material substance, it would need to separate the soul, which can be seen as the non-physical aspects of our being, from the body⁷. The challenge is conceptualising an ontology that integrates the soul and the body. The process of separating material facts and idealist values

⁷ In this context, the soul is seen as a storehouse for the values by which we live, and the body is seen as the temporary container or tomb in which the soul lives.

results in numerous dichotomies. The realm of the body or the physical realm becomes one that is perceived as ultimately factual where statements can be verified as either true or false, whereas the realm of values (in the Western sense) are understood to be belief systems that are not necessarily right or wrong, but rather are a subjective choice. Such a concept of values would be supported by notions of pluralism within a traditional modern Western society, for example. But when there are values that claim to be facts (i.e. lay a claim to be a universal truth), and are proclaimed in the public arena, the expectation is that they should have been and would have been tested by the ‘scientific’ disciplines within Western society. In the scientific, public arena, notions of pluralism are not accepted, as is witnessed in medical schools. For example, “no place is given to the possibility that what was given in the religious experience could provide an insight into truth that might radically relativise the presuppositions of the scientific disciplines” (Newbiggin 1997:18).

3.2.2.3 Overcoming meaninglessness by living dichotomously

Van Niekerk (1999) describes two responses to death, drawing on insights from Zygmunt Bauman. Since death poses a huge unknown to humanity, people inevitably develop life strategies in response to death. The first life strategy is the ‘deconstruction of mortality’ in modern culture by the continual ‘medicalisation’ of death. In this instance death is reduced into manageable problems such as treating the disease. However, this strategy fails to deal with death because death remains inevitable. Therefore, in Bauman’s words, modernity attempts to ‘de-metaphysicize’ mortality (Bauman 1992:152 as cited in Van Niekerk). The second strategy that attempts to deal with the inevitability of death is the ‘deconstruction of immortality’ in post-modern culture where the meaning of death is ‘fragmented’. In this instance, individuals choose to construct alternative interpretations and views around death. However, this also fails to deal with the problem of death because even if reconstructed differently, death remains inevitable. As Van Niekerk (1999:11) emphasizes:

“...the significance of death [is] for the understanding of life as a narrative quest. Death is the impulse that generates the narrative quest in all of us.”
(Van Niekerk 1999:11)

The two strategies described above are also applicable to how individuals may deal with suffering. Death is a ‘fact’ in the sense that it is a physical event whose occurrence can be scientifically verified, but simultaneously, death is something that we want to ascribe value to, for example, we often refer to death as a ‘tragedy’ (Van Niekerk 1999:11). Similarly, modern medicine copes with the question of suffering by reducing suffering to pain or

anything else that seems to be more manageable. Because medicine cannot explain suffering, people invent narratives to ‘dilute’ or attenuate the poignancy of suffering (Hauerwas 1990). However, as is the case with both the ‘fragmentation’ and the ‘deconstruction’ of death, both processes fall short of resolving the issues around suffering, e.g. childhood suffering. This thesis argues that the failure these strategies in dealing with suffering, means that medical students tend to develop a strategy that leads to a dichotomous life, i.e. they develop an ability to live within two different systems of belief or views of reality simultaneously.

Living a dichotomous life in this case means that one practices professional medicine according to the ontological perspective of one’s training – materialistic monism – while adopting a different ontological premise in one’s private life. For example, outside of medical practice, the health practitioner may interpret and regulate his or her social activity according to a belief system that is not derived from materialistic monism, such as hedonism, animism or Christianity. This process is arguably similar to the splitting or separation of facts from values, in which the health practitioner or medical student adopts a private value system and public ‘fact’ system. Hence the dichotomous life can be understood to be one in which one’s life practice does not have integrity with one meta-worldview.

The Greeks had a view of reality in which movement was explained through purpose. In contrast, science explains movement through natural causal laws. Teleological explanations have been abandoned. Hence in clinical practice, illness/disease is explained through causes that have undesirable effects, and the quest to address the purpose or function of disease on an existential level, or even to consider or explain such a purpose as an effect (desirable or not) of disease. Compounding this limitation of scientific explanation, craftsmanship is defined only as the process of labour, and an individual is understood to work in order to bring about or cause the onset of effects, rather than identifying and contextualising work within teleology. (Newbigin 1997:29) Yet purpose – both as far as labour and suffering are concerned are a part of human life, and even medical science progressed because of a search for ideals and improvements. Newbigin (1997:35-36) comments:

“A strange fissure thus runs right through the consciousness of modern Western man. The ideal that he seeks would eliminate all ideals. With dedicated zeal he purposes to explain the world as something that is without purpose. And, as I have suggested, this fissure becomes visible in two ways: in the dichotomy (one of the outstanding marks of a ‘modern’ society) between the public and the private worlds, and in the dichotomy in thought between what are commonly called ‘facts’ and what are called ‘values’. The

public world is a world of facts that are the same for everyone, whatever his values may be; the private world is a world of values and therefore to pursue such courses of action as will correspond with them.”

While there is a tendency to live one’s public life in a way that understands the public world as a world that is regulated by facts that hold true regardless of one’s own individual values, when one experiences a crises, often the tendency is to seek a value judgement as a explanation or resolution for such a crises. For example, one could visit the witchdoctor, or ask a pastor to pray against the devil, or if one is an atheist ironically blame God for such experiences. Such a dichotomous split between conceptions of the public and explanations for experiences in the private world is probably the widest within ontological belief systems that are characterised by a clear distinction between the supernatural and the natural, e.g. animism or pentecostal Christianity.

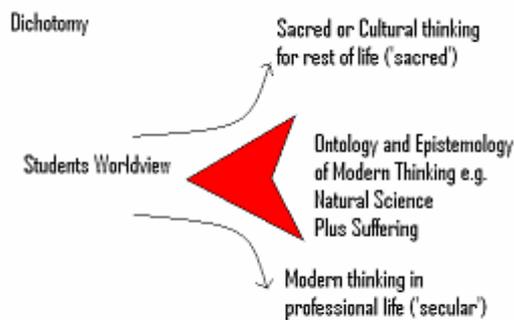


Figure 3.2: Dichotomous split

This rift between experience in the public and the private world amongst individuals who practice these belief systems is arguably due to the fact that the understanding of the meaning of reality in one world tends to be completely contradictory to that within the other. For example, a medical doctor whose understanding of medical practice operates through the ontological lenses of materialist monism may attempt to resolve a personal life crises by inquiring of the ancestors or by visiting a ‘witchdoctor’, whereas the world of ancestors is understood to be regulated by forces whose logic is completely contrary to that of the physical world. Yet, if he/she were a ‘true’ materialistic monist, theoretically there would be no dichotomous split between the way he/she practises medicine and the way he/she lives his/her private life. This dichotomous split between private life and public life is only be possible if the individual concerned has – consciously or subconsciously – adopted another ontological view that refers to a distinction between a natural world that can be understood factually, and

hence refer primarily to the public realm, and a supernatural world that has a contrary logic, and is used to interpret and manage private life.

This thesis argues that leading a dichotomous life is one of the ways through which the medical student may resolve the problem that materialistic monism has in dealing with the question of suffering – or even other questions relating to the meaning of life, for example the origin of evil. One consequence of this is also the adoption of a ‘secular/sacred’ dichotomy in a religious sense as a natural extension of the development of a fact/value dichotomy. It is through the adoption of a dichotomous life that medical students may resist the onset of the meaninglessness of medical practice owing to the unresolved question of suffering. It is perhaps for this reason that there would be such a need for ‘ethics’ courses within the various medical fields – clinical medicine included. It could prove to be extremely difficult to divorce values from facts, and so ‘ethics’ courses are a mechanism to deal with this dichotomous split within professional lives. How else would one overcome the ‘dichotomy between a world of so-called objective facts that can be ‘scientifically’ known apart from any faith commitment on the part of the knower and a world of beliefs that are solely the personal responsibility of the knower’ (Newbigin 1997:50).

“The philosopher David Hume first made the strong distinction between fact and value and commented that what ought to be can never be deduced from what is. In other words, it is impossible to derive prescriptive conclusions from descriptive premises. Science needs values like honesty, a commitment to truth, trust in each other, etc, but it also needs values, which give it direction in its application. Thus science gives us tools to make bombs or fertilized ova, etc, but it does not tell us whether we should do this, or what we do with the knowledge we acquire. It is only one of a number of tools for understanding the world, and without a wider world-view, which incorporates values, it can be (and has been) used diabolically. This is of course the nub of the abortion and euthanasia debate[s]. How one understands the dying person or the unborn foetus will determine what can and cannot be legitimately done. Hence the need for an ethical framework within which one practises science. Likewise one cannot deduce purpose from science. One can know a lot about a car from studying how it is made and how it runs, but that is different from driving it from one place to another. This analogy is the nub of the how and why distinction. Science says how we are made and what we are made from but it is our value system which will tell us why we are made,

what purpose we see in our lives. Purpose and value lie outside the purview of science and belong to our worldview.” (Gijsbers 2002)

3.2.2.4 Summary

Every culture, with its underlying worldview, including Science, will always undergo various stresses and tensions and will need to deal with the reality of suffering. The existential nature of suffering impacts the medical student as they begin to engage with patients who are undergoing forms of suffering that extend beyond physical discomfort or pain. However, medical school curricula are derived from materialist monism, an ontological perspective that does not address the question of suffering at all beyond alleviating the pain of the physical body. Hence, the medical student is typically not prepared to deal with suffering holistically, through a worldview that equips them to engage with it while interpreting its various meanings and purposes. Although this thesis does not provide theoretical grounds to suggest that the worldviews that individuals adopt are a result of their ability or inability to deal with suffering, adopting different perceptions about the nature of being and life can be a result of an experience or exposure to suffering, for example, World War II in the 20th century. Suffering can be one of the possible stressors that could cause people to reflect on their present paradigm of reality and hence create an opportunity to transcend the inadequacy of their present paradigm. This could prove to be the case with the exposure of medical students to the catastrophe of HIV/Aids. This exposure to suffering could result in students' construction and/or adoption of alternative ontological paradigms, and subsequently an escape from their dichotomous existence.

CHAPTER FOUR

The Biopsychosocial Model

4.1 The High Road or the Low Road

According to Johan Degenaar, a former philosopher at Stellenbosch University:

“If we are victimized by a discourse, we are in need of a new discourse, and that we are ourselves responsible for creating a liberating language which structures in a new way the world in which we are living.” (Kriel 1994:xxi)

The previous chapters have argued that the biomedical model is inadequate in training holistic doctors, primarily because their training fails to address the question of suffering. The biopsychosocial model has been viewed as a critique of and remedy for the biomedical model. The question is whether the biopsychosocial model can adequately achieve the goal of training holistic doctors and whether it would be adequate to deal with the question of suffering. This emphasizes the significance of Cassell’s quote:

“The test of a system of medicine should be its adequacy in the face of suffering; this book starts from the premise that modern medicine fails that test.” (Cassell 1991:vii)

In this context, Cassell is referring specifically to the biomedical model. However, the question here is whether he would have a similar prognosis for the biopsychosocial model. There are two possible responses to this question: The first, which is the high road, is that the biopsychosocial model does train medical students to be holistic physicians, and that this model does in fact surmount the limitations of the biomedical model. This conclusion presupposes that the model achieves all the ideal it envisions and that it also grapples with suffering beyond the physical dimension of a body in pain or ill health. On the other hand the low road is that the biopsychosocial model, although articulating a different epistemological approach, does not address the concerns of Kriel and Cassell, as discussed in previous chapters.

4.2 The biopsychosocial model

Medical schools are in the process of converting the basis of their curricula from the biomedical approach to the biopsychosocial approach. The consequent changes in teaching methods and paradigms of understanding are aimed at conceptualising a more integrated curriculum. Table 4.1 is an example of the changing focus in medical school curricula. The ‘physician-centred’ approach typically characterises medical practice within the biomedical model, whereas a ‘patient-centred’ focus typically characterises the biopsychosocial model.

Table 4.1. The change in focus in medical school curricula

From: Biomedical model	To: Biopsychosocial model
Physician-Centred	Patient-Centred
Physician's Agenda	Patient's Agenda
Biomedical Focus	Symptom Focus
Physician Gathers Data	Patient Tells Story

To assess the biopsychosocial model, this thesis relies on Pilgrim’s (2002) analysis in *The Biopsychosocial model in Anglo-American Psychiatry: Past, Present and Future*, and points out the salient features of his analysis that are required for the purposes of this discussion. The biopsychosocial model was proposed by Engel in the American Journal of Psychiatry (1980) in an article called *The Clinical Application of the Biopsychosocial Model* (as cited in Pilgrim) in order for psychiatry “to generate a fully scientific and inclusive account of mental disorder” (2002). With regard to the biopsychosocial model Engel states:

“The elements just described can be conceptualised as a systems’ hierarchy entailing levels of organisation. General systems theory is axiomatic about such hierarchies of knowledge. Lower levels of organisation are necessary for higher ones to exist but they are not sufficient to describe, or explain, their nature. With each higher level of organisation emergent characteristics appear, which are not present at lower levels. This may create a tension between holistic and reductionist knowledge claims in both natural and human-science.” (Engel, as cited in Pilgrim, 2002)

The biopsychosocial model seeks to avoid the reductionism of the biomedical model by recognising not only the disease in a clinical context, but also by acknowledging the patient as a whole entity in regard to his or her illness and social context. The model allows the doctor to make a clinical diagnosis without neglecting or even negating the psychological and social dimensions that are integral to the patient and his or her health. Therefore, in mental health problems, for example, the approach would be a combination of the scientific and the humanistic. In this context, the biopsychosocial model is an improvement on the biomedical model, and should be understood as a shift similar to the adoption of Einstein's physics, which did not completely replace Newton physics. Likewise a new paradigm for modern medicine need not negate the biomedical model. As Kuhn says, it is necessary to develop a 'paradigm shift' (1962).

One would expect an increased acceptance of this model, which is reflected not only in the prevalence of its terminology amongst medical professionals, but most importantly in terms of the time and energy spent on it in the curriculum. Although it was not possible to find relevant information on the strengths and weaknesses of the biopsychosocial model as an educational intervention within the curricula of medical schools, it is reasonable to expect that the curricula will have become more integrated, and particularly that these techniques of teaching found within family medicine (a branch of medicine whose practice resonated most with the biopsychosocial model) would have become more prevalent in other fields of medical practice. In other words, one would expect that the transition to the biopsychosocial model would ultimately aid in producing doctors who practice medicine holistically. However, it is important to consider whether the dominant status of the biopsychosocial model within a medical school's curriculum was enforced through acceptance of a pragmatic co-existence between various disciplines and fields of knowledge rather than through a genuine philosophical transformation away from the ontological underpinnings of the biomedical model is derived. In other words, although different departments within a medical school are willing to work together with other departments in an integrated way, it is still possible that the integration of the different fields medicine are not at all integrated in terms of their varied ontological foundations.

4.3. Assessment of the Low Road

Even if the biopsychosocial model does not depart from the biomedical model with regard to its ontological paradigm (natural sciences), as was hoped – there remains a need to re-evaluate and critique the underlying meta-theory of the biopsychosocial model. As Kriel

(2000:45 – as quoted on page 13) has commented, it is not a matter of training in communication or ethics, but a matter of transforming the nature of science.

In addition, he states the following with regard to these attempts at curriculum reform:

“None of the curriculum reforms however challenge the assumption that medicine is a natural science, nor the underlying natural-science worldview. Although the curriculum reforms may have improved the quality of learning, they are still reproducing the biomedical model in the minds of their students and the practice of their graduates. ...No real curriculum reform is possible unless the meta-theory of medicine, the natural-science paradigm and the biomedical model, is put up for critique.” (Kriel 2000:28)

A seminal consideration is whether the biopsychosocial model itself is viewed and practiced in a holistic way or in a ‘reductionistic manner’. Also, is it being derived and viewed in a materialistic or non-materialistic perception of reality? The biopsychosocial model needs to be exposed to the same critique as the biomedical model, in order to verify whether it is itself not based on and characterised by the same underlying natural-science paradigm that resulted in an inability of the biomedical model to conceptualise health holistically. As discussed above, the full extent of the inadequacy of this natural-science paradigm, even within the biomedical model, has itself not been fully exposed to an exhaustive critical examination. If the biomedical model has not attempted to deal with the question of suffering in its entirety, we cannot expect the biopsychosocial approach to address the question of suffering, unless it has transcended or successfully accomplished a shift from materialist monism. Even the term ‘biopsychosocial’ could be a problem in promoting the necessary shift in that it could lead to reductionism, whereby the health, or even the patient, is reduced to neat constituent blocks, i.e. the biological, the psychological and the social, unless it is both derived and understood descriptively to fit into the pattern of non-reductive theories such as Complexity (Cilliers 1998). A patient is a complex system, not necessarily complicated. A human being has many dimensions: biological, psychological, social, political, spiritual and so on, all of which interact with one another in a non-linear, interrelated and dynamic way. These are open systems, and can therefore not be assumed to be in equilibrium all the time.

“The behaviour of the system is determined by the nature of the interactions, not by what is contained within the components. Since the interactions are rich, dynamic, fed back, and above all, non-linear, the behaviour of the system as a whole cannot be predicted from an inspection of its components. The notion of ‘emergence’ is used to describe this aspect. The presence of

emergent properties does not provide an argument against causality, only against deterministic forms of prediction.” (Cilliers 2000:24)

The biopsychosocial model has the potential to maintain sensitivity to the patient as a whole without reducing him or her to a singular component in his or her world. It has the potential to conceptualise the complexity of the systems, both epistemologically and ontologically, which is impossible using the paradigm of materialistic monism. However, if we do not resist the tendency towards reductionism in our approach and use of the model, we run the risk of focusing on the singular components of the systems, and not the systems themselves. As a consequence, we will create separate entities for those aspects of the patient’s world that are biological (clinical), those aspects that are psychological (fears, beliefs, expectations) and those aspects that are related to other aspects of the patient’s social context. In this way, causality is identified within each separate isolated entity, rather than within the whole system itself. On the other hand, if we were to adopt a ‘complexity framework’, as suggested by Cilliers, then the doctor-patient interaction would have ‘emergent’ properties’ over and above those of the biopsychosocial model, as we currently apply it:

“Sandler and Hulgus (1992) showed in their paper that the clinical encounter encompasses more (than the biopsychosocial model of Engel). After all the data is gathered an evaluation needs to take place from the patient’s point of view... Such evaluations can of course become ethical and even legal if the choices clash with the values of the treating practitioner. Finally faced with the clinical data and the patient’s values a pragmatic solution needs to be found. The application of wisdom, if you like. Sandler and Hulgus give a number of illustrations of "Crossed aspect decision making" where the ethical issue is confused with the need to gather more data, or a pragmatic issue is confused with an ethical one. The point I am trying to make here is that the clinical encounter is more than just science – there are evaluative (and ethical) as well as pragmatic (or wisdom) issues. However there are other aspects to the interaction of science and a wider view.” (Gijsbers 2002)

Simply teaching the biopsychosocial model without addressing the underlying materialistic monist worldview of medical school is a mask that conceals or veils the biomedical approach. Although, in a sense, we are advocating a holistic model, fields such as psychiatry could still essentially be fitting into a biomedical model, albeit the model’s name may have changed. For example, neuropsychiatry still explains psychiatric illness on the basis of organic brain changes, or still makes use of the reductionist classifications such as the American Psychiatric

Association's Diagnostic and Statistical Manual (the 'DSM' as most students refer to it). Pilgrim also indicates that the biopsychosocial model has not become visible in the discourse of psychiatric texts since 1980 (2002)⁸. Pilgrim gives an overview of the biopsychosocial model within in the Anglo-American context of psychiatry and his concern is that, despite its promise, it has not been successful within the psychiatric field (albeit an opinion from the USA).

Will the question of suffering unmask this failure to transform the ontological assumptions of medical schools, by being a measure of the extent to which ontological paradigms within the curricula are able to address different dimensions of reality? In other words, the biopsychosocial approach faces the risk of 'collapsing' into the biomedical approach if modern medical schools continue to teach through the existent ontology of materialistic monism. Aids is definitely a multi-dimensional illness. One focus of this dissertation is how the medical student is equipped to deal with the question of suffering and how their response to this dimension of illness impacts their ability to relate to the patient holistically. The tendency to avoid the question of suffering can also affect the biopsychosocial model, most especially in those instances where students attempt to reduce the overwhelming catastrophe of Aids into what might be conceptually and practically more manageable. On the other hand, Aids could potentially be a 'positive' opportunity as far as the medical curriculum is concerned, because its multi-dimensional nature requires that medical schools look towards an ontology whose perceptions of reality are multidimensional. Such an ontology allows the biopsychosocial model to address the complex relationship between all the biological, psychological and social dimensions, as it aspires to do.

⁸ These discourses are outlined in Pilgrim.

CHAPTER FIVE

Three Episodes in the Life of a Medical Student

5.1 Three episodes in the life of a medical student that contribute to the student developing a materialistic monistic ontology of a patient

Although the term ‘mind’ is an ontological derivative, in this context it is understood to be the ontological template on which a student formulates ideas. The term ‘development’ refers to the processes of thinking and conceptualisation that occur in the minds of students as they continue through medical school, and does not mean that these processes necessarily lead to or progress towards more holistic forms of analytical conceptualisation as far as the patient is concerned. The development begins on entering medical school, where the student’s perception of reality is shaped towards dualism and ultimately materialistic monism. This is due to the curriculum’s bias towards materialistic monism (as discussed in Chapter 2) and the students’ exposure to suffering in the hospital wards without any real attempt on the part of their educators to help them address the question of suffering (as discussed in Chapter 3).

In many instances, when a student enters medical school, he or she does not necessarily have a perspective of life that is philosophically differentiated; in essence, the student’s ontology around notions of life or even being have not yet been moulded into any particular framework of understanding, e.g. the dualism of mind and body. One can assume that when most students enter medical schools, they have not yet reflected on either their own consciousness or that of others. In other words, their ontological notions of self and reality stem largely from the influences of the social context from which they come (Marx 1977)⁹ and are often fluid and diverse. These notions are taken for granted, and are accepted as ‘natural’ and are not reflected on in any significant manner (Bourdieu 1990). This means that the mind of the students is not ‘blank’; and that they do have an ontological framework through which they perceive and understand the world around them. The mind is easily moulded to ‘accept’ or to ‘develop’ into the ontological paradigm of the medical school, precisely because there has been no process of reflection of one’s consciousness and social practice. It is the apparent lack of ontological reflexivity that makes it possible to remould or channel students’ minds towards the dominant ontological framework at a medical school. Therefore, this thesis argues that the ontological paradigm embedded within modern medicine is not imposed on a

⁹ It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness.

‘clean slate’, but has the potential to transform a pre-existing state of mind, assuming that that state of mind is not a philosophical approach that has been critically reflected upon. Students could be broadly dualistic if they have a religious background, similar to the animistic separation of natural and supernatural or Christian platonic thinking. Alternatively, they could be materialistic monists if they are truly atheist. These stances would depend a great deal on their social background.

This thesis presents three episodes in the life of a medical student to show how both the ontological paradigm of the medical school and their and medical students’ concept of suffering (and avoidance thereof) transforms their yet ‘unreflected self-consciousness’ into a dualistic and then a monistic materialistic understanding of the patient. These episodes are gross anatomical dissection, psychiatry, and Aids. The use of the term ‘episode’ attempts to characterize an event in the life of a medical student that has a beginning and an ending, yet whose impact remains fixed in the mind of the medical student, despite the event itself having passed. The three episodes are

1. the medical student walks into a dissection room to find uncovered cadavers on trolleys
2. the student encounters a ward full of psychotic patients in a mental institution
3. the student walks into a hospital ward in which most of the patients are suffering from HIV/Aids.

5.1.1. Gross Anatomical Dissection

At some point in his or her training at a medical school, a student has to dissect a cadaver in the study of anatomy, or at least observe pieces of a cadaver (Howe 2004). This normally happens in the beginning of the medical student’s years at medical school. What philosophical thinking does the student need to assume in order to be able to cut the body in front of him or her? The first base rationale that the student needs to accept is that the body is dead! So the student needs to somehow separate the non-living from the living entity (e.g. mind/body dichotomy) in respect of the cadaver in front of him/her. Irrespective of whether this is a conscious or unconscious act, , the paradigm underpinning the anthropology of the patient begins to take shape during anatomical dissection. As a consequence, one step in the development of the student’s thinking is the acceptance of a dualistic view of reality, whether subconsciously or consciously: The body in front of him/her is dead and is separate from what was living.

Which came first? Was dualism as an idea entertained, and then the body subsequently cut, or was the idea of dualism formulated following the dissection of the body. If we were to look at history for example, Michelangelo dissected cadavers in secret since the Church would not allow him do so. Also, in a traditional African setting, when someone dies in a hut, people are wary of touching the person. Regarding dissection in European culture, Sawday, a historian, suggests that Descartes may have formulated his ideas on dualism¹⁰ watching dissections. Sawday wrote an imaginary scene involving Dr Tulp (a figure in Rembrandt's painting *The Anatomy Lesson of Dr Nicolaes Tulp* – 1653) and Descartes (1995:153):

“. . .Tulp's forceps are delicately probing the flexor digitorum muscles of Adreaenszoon's [the name of the cadaver, an executed coat-thief] left hand. By pulling on these flexor muscles, the (dead) fingers are made to curl, a gesture, which Tulp echoes with his own (living) left hand. . . . One intellect (Tulp's) has animated two bodies, one of which is living, and the other is dead. In the dead body, the will –*voluntas*– has been extinguished, but the mechanism – 'the laws of mechanics' which, Descartes was to explain . . . inhabit all of nature – was still in operation. In the extinction of Adreaenszoon's will, lay the triumph of Tulp's intellect.



To this day, dissection is one of the initiatory rites of passage into the medical profession, as most medical schools still expect students to dissect cadavers. Yet surely dissection presents a problematic orientation¹¹ to questions of health as the medical student starts off with a dead rather than a living person. Thus, in the beginning of one's medical training one has to detach

¹⁰ I now know of three formulations on why Descartes developed the Cartesian model – 1) as an empirical observation while viewing a dissection, 2) as a political solution to allow science to investigate the physical realm without interference from the Church, and 3) Descartes saw where the natural science paradigm was heading – dehumanisation –and his dualism was an attempt to save the human person and the products of culture (including religion) from the natural science paradigm.

¹¹ or a bad metaphor

oneself from what is a live and active human being, and orientate oneself to what has now become a passive object. As Spiro (1992) argues: “Dissection of a cadaver in medical school teaches primacy of the eye over the ear, for cadavers don't complain, and no one has to listen....”

The anatomical dissection of a human being is known to have an impact on the medical students' wellbeing (Gustavson 1988; Hafferty 1988), sometimes positive (Wiley-Liss 2001) and sometimes negative (Hanock 2004). Fleischmann (2002) categorised coping mechanisms used to deal with studying cadavers into task-focused (the biological perspective; focus on parts; importance of dissection; fixation on cleanliness), emotion-focused (respect for the donor; identification; fascination with the body; cadaver jokes; cadaver stories), and avoidance-focused reactions (depersonalisation; detachment; denial). It is the 'negative' coping mechanisms that contribute to viewing the human body dualistically – with a living entity that is gone leaving the non-living entity behind. The task-focused approaches tend to be 'reductionistic', reducing dissection to a physical problem. The emotion-focused approaches do have the opportunity to embrace the humanity of the dissection (e.g. the students give their cadaver a name) or create further opportunities to reject its humanity (e.g. jokes). It is the avoidance-focused reactions that align most with the analogy that dissection is a 'bad' metaphor for the body as a passive object. Depersonalisation, detachment and denial all contribute to the idea of needing to define the human body as dead in order to be able to cut it.

This does not imply 'pure' anatomy is still being conducted at medical schools – new curricula have changed the mode of delivery (e.g. predissected cadavers, models, and computer imaging) so one could question the impact dissection has on medical students nowadays. But the questions about life and death do not simply disappear with a pre-dissected arm: “Whose arm was this?” One could reply: “It is for our education, it does not matter whose it is.” Interestingly, when 99 medical students were asked this question: ‘Would you yourself consider donating your body to a medical school to be used as a cadaver?’ only 11% said yes (Greger 2005). Whether it is an entire body or an arm, the object of the students' analysis is still a representation of something integrally related to our being.



The methodological underpinning of dissection reduces the cadaver to a non-living entity. Not surprisingly, medical students develop dialogue that refers to patients according to their body parts: for example the patient with ‘liver cirrhosis’ or the ‘patient with the good liver’, rather than a patient with a ‘drinking problem due to a divorce’. They learn to identify and treat the physical entity, the ‘liver cirrhosis’ for example, but they do not learn how to help ‘Mr Smith with the drinking problem’, except to advise the patient to stop drinking. The dissection halls expose medical students to the concept of death, a concept of suffering, but unfortunately, those students are ill equipped to relate to the experience, and engage with it, holistically.

5.1.2. Psychiatry

When medical students walk into the admissions ward for psychotic patients, they are suddenly confronted by the question: ‘What has caused them to be so mad?’

It is surprising that the mind/body dilemma is not critiqued more by students going through Psychiatry, and that there is so little discussion about psychoneuroimmunology (so-called mind/body medicine). The next paragraph illustrates this dilemma using a ‘thought’ experiment:

Students are posed the following question: “What comes first, an idea and then a chemical reaction in the brain, or a chemical reaction in the brain and then the idea?” Without thinking,

almost all students answer: the chemical reaction without much reflection on the answer. Those who do answer that the idea comes first are normally those who have reflected on their own non-naturalistic or dualistic view of reality, such as a Christian who decides that an idea comes from their soul not their body. When this question is posed to lay people, most of them answer that the idea came before the reaction.

Why is it that medical students answer differently to someone who is not as exposed to the biochemistry of a chemical reaction. Is it that the person not exposed to natural science methodology has little understanding of what a chemical reaction means, or is it 'logical' to their minds that the idea should precede any other action? But to the medical student, the mind has become an epiphenomenon of the brain, although they may not necessarily have reflected on this issue.¹² Throughout the medical curriculum, the medical student is exposed to the physical nature of mental illness, such that the aetiology is explained on the basis of an imbalance of chemicals, such as dopamine or serotonin. And in order to correct this imbalance, one needs only to introduce the appropriate drug therapy. If all mental illness is explained in such a biologically determined way, there is hope that a cure can be found in the form of some kind of drug – however, it could also mean that it is impossible to change the physical constitution of the patient. The answer that is given to the question: “Why are they mad?” is ultimately “Because they have a chemical imbalance”. The medical student leaves medical school knowing how to treat a mentally ill patient biomedically, instead of being able to help them from a psychological perspective. Hence, medical students’ anthropological conception of a person is shaped by a number of factors, not the least of which is the focus on the physical nature of the psychiatric illness.

When I was exposed to psychiatry, particularly the psychotic wards, almost all of us as medical students struggled with the psychological stress that it visited on us, particularly depression and confusion (‘How can people lose their minds like that?’). I am unable to verify the generality of my experience through any empirical evidence presented in journal articles, however. Despite numerous attempts, I was unable to find research or arguments that suggest that psychiatry itself causes questions of meaning to develop amongst medical students. On the contrary, all the literature that was available in this regard, related only to how psychiatry helped medical students in need. It seems that the discipline of psychiatry has thus far not thought of the psychological trauma that being exposed to a whole ward of ‘mad’ people, or even the teaching on psychiatry could cause amongst students. For example, after a lecture on obsessive compulsive disorder, one begins to think that one has it oneself. This is

¹² It would be interesting and useful if this observation were to be further investigated through a sociological or anthropological study.

one way through which ‘mad’ people pose a challenge to our own anthropological understanding of self. Also, in the psychiatric wards, we find suffering in a different form: a mental one. Hence, medical students’ anthropological conception of a person is influenced to avoid the mental anguish the patient has, and focus on what is considered the ‘manageable’ chemical imbalance – thereby avoiding the existential nature of the mental suffering before them.

The discussion on the anatomical dissection episode attempted to depict the development of a shift from a dualistic perspective to that of materialist monism as far as conceptualising a human being is concerned. In the context of psychiatry, ‘materialist monism’ is reflected in the tendency for the brain to be the only entity, and the mind to be merely an epiphenomenon of the brain. In other words, ‘matter is all that matters’. Again, with the exposure to subjects such as physiology, biochemistry, physics, and pathology, which focus only on the physical aspect of the human being, by the time the medical student approaches the psychiatric ‘episode’ of medical school training, they have been inducted into a certain way of thinking that reduces the mentally ill patient to a non-living ‘bag of chemicals’. For instance, suppose that a patient has ‘depression’¹³ that is attributable to something did wrong causing them to experience feelings of guilt. The question is: is this a patient with ‘depression’ as universally described according to the standards of clinical practice or is this a unique individual patient who is struggling to deal with feelings of guilt that have resulted in symptoms suggestive of clinical depression as described in a medical textbook?

5.1.3. Aids

Inevitably a medical student in South Africa will be exposed to the HIV/Aids epidemic, which is prevalent here. This normally happens in the later stages of a medical student’s training. How does the medical student – either consciously or subconsciously – engage the HIV/Aids epidemic?

Medical school training will deal with all physical attributes of the HIV virus and its impact on the body. Through subjects like virology, immunology, and anatomical pathology, the patient can be reduced to a CD4 count¹⁴ or Cryptococcal Meningitis¹⁵. Is HIV/Aids purely a physical problem? No. But when one sees Aids patients in the wards, their signs and

¹³According to the American Psychiatric Association’s DSM-IV classification system of mental illness.

¹⁴This is a haematological marker on infection-fighting ‘white’ blood cells that indicates the ‘strength’ of the immune system.

¹⁵This is a fungal infection of the outer layer of the brain due to the immunologically compromised state of the patient.

symptoms can be numerous – so numerous that the psychological and social aspects of the person are almost completely obscured, though sometimes a government grant application is filled in to obtain some financial support the person. A medical student is unlikely to observe the psychosocial aspects of the patient being addressed in a hospital setting. They learn to deal with Aids patients by addressing the physical attributes of their lives: if they have tuberculosis, we treat them with anti-tuberculosis treatment; if they do not have food, we give them food grants or other nutritional boosters; if they do not have money, we give them money.

HIV/Aids patients were as good as dead in South Africa before the ARV (anti-retroviral medication) rollout. However, the doctor continues to be exposed to different aspects of suffering in society. For example, two patients are lying opposite one another in a hospital ward, both dying of Aids. Typically neither would know that the other is also suffering from Aids. Only the doctor is privy to this information. It not difficult for doctors to become avoidance focused (e.g. depersonalisation, detachment) in their relationship to Aids patients. Walking into a hospital ward full of HIV/Aids patients, or even a paediatric ward full of Aids babies, has a marked effect. How does the medical student who is progressively becoming a materialistic monist address this suffering? Maybe searching for the cure for Aids is the solution, but how does the medical student address the immediate psychological, social and even political dimensions of Aids, when they cannot even make sense of their own suffering due to excessive exposure to the traumas of others. This does not mean that suffering, in the case of Aids patients, perpetuates the tendency towards materialistic monism, but rather it is the avoidance' of this non-physical suffering that contributes to the re-emphasis of the distinction between body and mind/soul to enable medical students to handle more illness and death.

These medical students have become 'voyeurs of suffering' (Cohen 2001:169). 'Compassion fatigue' builds up with the information overload as well as the large numbers of Aids patients. Medical students are observing a major catastrophe. As a result, desensitisation is unavoidable and burnout sets in (Bateman 2001; Aiken 1997;McKusick 1986). Also, as unresolved grief over multiple deaths builds up, a tendency to avoid patients who are going to die also occurs (Schulz 1978)¹⁶. In his book *Denial*, Cohen discusses what he calls the 'passive bystander effect' (2001:3). Through this phrase he aims to describe the (non-)actions of people who do not respond to a clearly unjust or inhumane situation, such as the Holocaust. This could apply in a context in which others are dealing with suffering as a collective

¹⁶ At times some colleagues tell me that they want to work abroad because they want to practise 'real' medicine, not just see HIV/Aids patients.

‘people’ or a case in which an organisation is faced with the task of fully absorbing information that is disturbing. Large-scale suffering has now entered the public arena in South Africa with regard to Aids, and it seems we even have a case of ‘macro-denial’ (2001:51) within the national health ministry. As with other historical cases of mass suffering (e.g. the Holocaust), this historical event is being met with personal denial by people who can be expected to know what is happening, but do not want to believe it (2001:52)¹⁷. Denial is integral to the Aids epidemic in South Africa. However the medical students are not in denial.

How will medical students develop meaning in the face of this kind of suffering? They are also affected by the suffering, in the social and spiritual dimensions. Until recently, doctors had very little hope to offer patients in the government sector. But will the antiretroviral rollout contribute to a holistic approach to the HIV/Aids patient? Conceptually, suffering then applies not only to the patient, but also to the healthgiver. Because if medical practitioner themselves do not find meaning in this epidemic, how are we going to foster the development of compassionate doctors who don’t treat HIV/Aids on a biomedical level. ‘Suffering’ is intergral to the Aids epidemic.

How do we develop a curriculum that would mould an ontology of a holistic life within the student’s mind – rather than one that has a tendency towards dualism and/or materialistic monism. When the doctors treat HIV positive patients with ARVs¹⁸, will they become so focused on the pharmacological dynamics of the drugs on the body such that they avoid having to deal with the deep emotional and social implications that Aids has for the patient? Would this not impinge on treating the patient holistically? The hospice movement in South Africa¹⁹, which has a very holistic understanding of a human being, only started to meet the needs of the terminally ill Aids --- patients within African communities with the onset of the HIV/Aids epidemic; but at that stage there was no focus on ARVs as they were out of reach for most HIV/Aids sufferers in the terminal stage. The hospice movement in South Africa, before activism on their part in relation to HIV/Aids, was mostly involved in ‘white’ suburbs with regard to terminal care of the elderly. With the ‘rollout’²⁰ of ARVs in South Africa, will the emphasis in HIV/Aids move from ‘holistically’ addressing the patient, to a biomedical

¹⁷ At a JUDASA (Junior Doctors Association) meeting at Durban Medical School in December 2002, a group of medical students were denouncing the executive right to challenge Thabo Mbeki and his stance on HIV/Aids.

¹⁸ Anti-retrovirals: Drugs used to suppress the HIV virus in the human body.

¹⁹ The health professional field is represented by the Palliative Care Society

²⁰ This word has been commonly used to typify how the South Africa government will plan and deliver services and clinics that will provide ARVs. This plan came into being near the 2003 national elections.

understanding of the patient e.g. what is their CD4 count? The complexity of the biomedical care of the patient, and the time it takes, will then begin to overshadow the more 'holistic' aspects of HIV/Aids. Again, the science of medicine will overshadow the art of medicine.

Since the biopsychosocial model does not address the underlying materialistic monism of the medical school, it will eventually only be understood within the conceptual framework of materialistic monism. This is emphasized if the individual student who progresses through the medical school does not seek to view the concept of suffering in more than a material dimension. In light of the HIV/Aids example, as stated before, HIV/Aids is ontologically a 'material' problem; even though the biopsychosocial approach can articulate certain 'bio', 'psycho' or 'social' needs, they will be articulated in 'material' ways. However the multi-dimensionality of HIV/Aids could also be seen as an opportunity for the adoption of a holistic model of care because of its multi-faceted nature.

CHAPTER SIX

CONCLUSION

In *The Birth of the Clinic*, Michael Foucault equates the ability of doctors to see the disease below the surface, where lay persons cannot gaze, with the power of medicine. The great advances of 19th century medicine involved the invasion of the body – gazing, to use Foucault’s term, into its depths. Opening the body not only revealed it, but demonstrated the body’s powers – the miraculous complexities of human biology. Opening the body permitted the entrance of science into medicine, and not only effective knowledge and treatment of disease has followed but amplification of the body’s powers...a central task for the 21st century is the discovery of the person – finding the sources of illness within the person, generating methods for the relief of illness from that knowledge and revealing the power within the person as the 19th and 20th centuries have revealed the power of the body. (Cassell 1991:174)

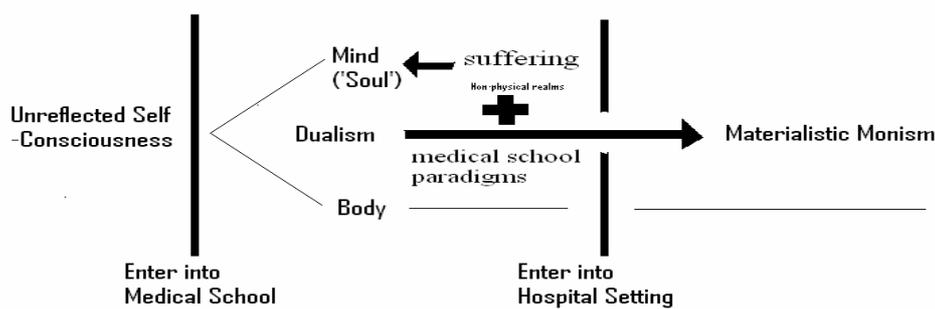


Figure 1.1: Timeline of the development of medical students’ minds as they progress through medical school

Figure 1.1 summarises and explains the conceptual change in the ontological development around the meaning of humanity and ill health as medical students progress through medical school. The figure tries to represent the ‘collapse’ of the tendency towards dualistic thinking in the medical school’s curriculum into materialist monism, as outlined by Kriel and Cassell – with particular reference to the biomedical model and the low road of the biopsychosocial model. A change in epistemology to the biopsychosocial model, without addressing the limitations of materialist monism as well as the question of suffering, results in a similar ‘collapse’, and hence fails to transcend the limitations of the biomedical model. Subsequently, the patient continues to be dehumanised, such that the art of medicine is completely overshadowed by a scientific rigidity in medical practice.

To reiterate the central propositions in this enquiry:

- Kriel’s assertion that the underlying ontology of the ‘biomedical’ model of the medical school is materialistic monism. Cassell’s assertion that the ‘biomedical’ model of the medical school has failed to address the concept of suffering and has limited it to a material understanding.
- That if the underlying ontology of the modern medical school with the biopsychosocial model has remained materialist monism, then Kriel’s assertion holds true for the biopsychosocial model as well. That if the biopsychosocial does not address the concept of suffering, then Cassell’s assertion holds true for the biopsychosocial model as well. If Kriel’s and Cassell’s arguments hold true both for the biomedical and for the biopsychosocial model, then the envisioned training of ‘holistic’ doctors will not occur. Then the biopsychosocial approach, albeit a broader epistemological approach will face the same fate as the biomedical model.

Neither Kriel’s nor Cassell’s assertions are intended to stop the science of medicine, rather they seek to include the art of medicine. As Pellegrino (1979:16) states about medicine: “The most humane of sciences, the most scientific of the humanities”. This relates to how health practitioners conceive the ontology of the person being treated (Kriel’s argument) and to how the goals of medicine are dialectically related to suffering (Cassell’s argument). The point is not that we teach ‘suffering’ only, but that we have a better understanding of ‘healing’. It is impossible to have the one without the other.

Science, by itself, cannot help us understand what it means to be fully human, and therefore through it, we can never fully understand suffering. An Aids patient experiences multi-dimensional suffering: biological, psychological, social, spiritual and even political²¹. Paradoxically the HIV/Aids epidemic in South Africa will be a test for the medicine that is taught, such that the inhumane nature of modern medical practice will become evident. All the South African medical schools could produce world-class doctors based on the humanitarian opportunity that accompanies the Aids epidemic. As has been argued, HIV/Aids creates the potential for an epistemological shift as far as the medical school curriculum is concerned, as the limitations of materialist monism are exposed. If there was ever a reason for the shaping of caring doctors, now is the time²².

These arguments lead naturally to the question whether the modern medical school curriculum can overcome its own materialistic monism and address the concept of suffering. The answer is yes, if we could:

- develop a non-reductive and non-materialistic ontology to support the epistemology of the biopsychosocial approach. The chances of this happening are slim since the paradigm of materialistic monism continues to dominate at medical schools despite their supposed move away from the biomedical model.²³
- develop students to be learners-for-life - learning from their patients as well under the guidance of a good teaching ethos. Family Medicine is well positioned to impart this teaching style.
- reflect and engage the question of suffering by learning from our patients
- continue to continually integrate and evaluate the curriculum

This thesis has argued that how we address all the dimensions of suffering will unmask whether we are holistic doctors or not. Suffering always begs an answer. It always stimulates us to wonder why. To end with, here is a thought experiment: When you hear the word 'Aids', what do you visualise, what questions do you want to ask? Did you see a biomedical situation or a human situation?

²¹ Hence, I wonder if South Africa should be advocating the biopsychosocial-political model of healthcare!

²² Ke nako sekunjalo – a popular political activist slogan

²³ Fortunately, since we do not have access to all the technologies the world can offer because of the high costs involved, we won't be faced with hyper-modernism.

6.1. Recommendations for the future:

6.1.1. Empirical Research

My contribution has sought to show conceptually how the ontology of natural science (e.g. materialistic monism) and suffering observed by medical students during their medical training influences their understanding of the patient. These conceptual studies could result in future empirical studies.

6.1.2. Educational Interventions

"Once medicine is established as anthropology, and once the interests of the privileged no longer determine the course of public events, the physiologist and the practitioner will be counted among the elder statesmen who support the social structure. Medicine is a social science in its very bone and marrow." (Rudolph Virchow, *Die Einheitsbestrebungen*, 1849 in Bibeau 1999:49)

We need to evaluate whether our 'new' curricula will be able to develop these caring doctors, and this is Kent's recommendation to the Health Professionals Council of South Africa (HPCSA). Kent (1994:242) also recommended that the HPCSA examine the feasibility of a training centre for medical educators. As Fehrsen would say, it is not a matter of thinking, but 'action and reflection leads to quality information and learning'²⁴. Here is his analogy with bicycle riding:

"Reflection upon action generates new knowledge within a user format. Knowing how to ride a bicycle in theory is very different from having the whole person knowledge of actually being able to ride a bicycle. Reflecting on this ability may increase your explicit knowledge and improve your competency. In this way the Quality Improvement Cycle becomes a superior learning cycle to a mere learning cycle for the purpose of learning only. It is in doing better and reflecting on that, that deeper learning takes place." (Fehrsen 2001:1)

²⁴ Schön, D. *Educating the reflective practitioner*. Jossey-Bass, San Francisco 1987 as cited in Fehrsen

If the goal of medical schools is to train ‘good doctors’, and one of the goals of medicine is to alleviate suffering, then surely it is reasonable to teaching on the concept of suffering to be part of the teaching in modern medicine.

“New curricula and education strategies have as a goal to ‘strengthen the humanistic dimensions in western medicine’.” (Schei 1992:1)

Since the 1990s the eight medical schools in South Africa have been changing their medical curricula to move away from the reductionistic, old ‘British’ model of medical schools (Kent 1994) based on the ‘biomedical model’, with its classical division into pre-clinical years during which the basic and applied sciences are taught, and clinical years, which focus on clinical training. The Walter Sisulu Medical School is the only exception in the early nineties and has had an integrated curriculum since 1992. In general the move has been away from reductionist blocks of academic fields, e.g. biochemistry, physiology, chemical pathology, to interconnecting these academic entities around a patient case, where these different fields are interlinked with the psychological and social aspects of the patient’s world – the biopsychosocial model. I cannot provide any national analysis of these transformations of medical schools since no study has been done yet. Also it is only recently that medical students are beginning to graduate students from the ‘new’ curriculum²⁵. Kent wrote a masters thesis entitled ‘Medical Education and the Importance of Teaching Medical Teachers about Teaching’ (1994), in which he argues that there is a need for the SAMDC (South African Medical and Dental Council, now called the Health Professionals Council) to conduct a national review to examine the appropriateness of medical education at all medical faculties in South Africa²⁶. At the time, all the medical schools were still teaching a curriculum based on the biomedical model, and were in fact resisting change, arguing that the proposed changes were a ‘pedagogy-versus-politics’ debate. Each medical school has now adopted their own version of the ‘new’ curriculum with varying emphasis on the level of integration of the different disciplines. This is most probably being carried out on the basis of the globalisation of the ideas from progressive medical schools, such as: McMaster Medical

²⁵ HPCSA accredits all the medical schools every five years, with new curricula every three years.

²⁶ In the rest of southern Africa, the medical schools in Harare (Zimbabwe), Lusaka (Zambia), Blantyre (Malawi) and Maputo (Mozambique) are continuing to follow the ‘old’ curriculum, except for the Beira (Mozambique) Medical School established by the Catholic University, which is following the Maastricht curriculum – a ‘new’ curriculum. There are medical schools in Tanzania (3), Angola (2), the Democratic Republic of Congo (three government medical schools and numerous ‘private’ medical schools) whose curricula I have not investigated.

School (Canada), Maastricht Medical School (Netherlands) and Newcastle Medical School (Australia). It would be interesting yet necessary to do a study on how these transformation processes are taking place within the medical schools, bearing in mind however that these changes could in fact be clouded by medical politics, rather than debates around pedagogy. With this move to a 'new' curriculum, it is difficult to verify whether the underlying ontology or epistemology of medical schools has been addressed, beyond a logical analysis of the ontological premises of the biopsychosocial model. The question of whether the philosophy of medicine will become part of the medical school curriculum is an interesting one, since medicine in the West originated as a branch of philosophy. Educational changes in terms of the 'new' curriculum have been multivariate in South Africa, and as mentioned before, no national study has been done by the Health Professional Council to evaluate the success and direction of these transformations in the curricula as a whole.

The question of suffering will by default become addressed as we deal with the underlying orientation of materialist monism of the curricula and strive to become more patient centred. It is not because the clinical method has an immoral disposition that makes it inadequate, but rather that the theoretical framework is inadequate to fully understand the complexity of a conscious human being. Grappling with existential questions, values and the meaning of relationships is an opportunity for alleviating the suffering or death of individuals.

“When I discussed the problem of suffering with laypersons, I learned that they were shocked to discover that it was not directly addressed in medical education. My colleagues of a contemplative nature were surprised at how little they knew about the problem and how little they had given it, whereas medical students were not sure of the relevance of the issue of suffering to their work.” (Cassell 1991:31)

Addressing the question of suffering by slotting in a module within the medical school's curriculum is not what is being proposed here. Rather, it is necessary to reconsider the ontological underpinnings of the medical school's curriculum, so that a discussion around healing would implicitly address the whole question of suffering beyond the limited scope of materialism. It requires that medical educators be both sensitive and reflexive about their own perceptions of reality, in order to impart this level and aspect of conceptual thinking to the students.

With regard to fully addressing the question of existential suffering, it would be very difficult for the medical schools to promote one specific approach, and so discussions around the question of suffering would best be facilitated as an open question in forums such as tutorial groups, in the appropriate contexts of: anatomy (e.g. address human dignity), psychiatry (e.g. mental suffering), and palliative medicine, as examples. How the question of suffering impacts the student should also be addressed in tutorials. As expressed by Koop (1976), often medical students are even unsure of their own roles:

“I don't think a medical student is ever told what his mission in life is. Certainly no one told me when I was a medical student what was expected of me as a lifetime goal in assuming the role of a physician.” (Koop 1976)²⁷

Some students come to medical school saying that they want ‘to help people’ but by the time they finish, this has changed to ‘pursuing a career’. Some come to medical school and fulfil their dreams. It seems that it is often around 3rd and 4th year in the medical school programme that medical students personally question why they are doing medicine. I also feel that the failure of the medical school to understand its underlying ontology and epistemology contributes to this scenario – ultimately, nowadays, to become a doctor is to fulfil one’s task within the health industry. Medical practice is no longer viewed as a vocation, and in the context of the dichotomous life that many health practitioners live, work has been completely severed from teleology. Evaluating the existing medical school curricula is not going to be a matter of ‘teaching’ the goals of medicine. The question extends far beyond the medical student into the very heart of our modern culture.

We should attempt to come to some understanding of how medical training and particularly medical educators imbue their students with certain goals of medicine. Also, we need to ask ourselves questions about whether we prepare students adequately, through pre-counselling for example, before they face the cadaver room, psychotic ward, or a ward full of Aids patients who will not have access to antiretroviral drugs. We need to consider whether any of them need support for post-traumatic stress disorder (PTSD) or a need to learn healthy coping mechanisms. It might be useful to conduct a study that investigates how medical students cope with their medical studies at various key junctures.

²⁷ U.S.A. Health Surgeon General for the USA 1982-1989

“Only a few medical schools offer a targeted course on immeasurable [or incompletely measurable], but vital areas of human feelings, sensibility, and existentialism. Examples include: suffering, fear, want, frustration, unresolved psychological conflicts, old psychological trauma, hopelessness, despair, love, optimism, happiness, kindness, and empathy. We measure some of these things by having the sufferers fill out a questionnaire or rate them in a visual analogue or similar scales. Such measurements have been useful in clinical practice and research, but all the dimensions of suffering are *truly* not measurable. Aristotle said that a physician should know when it is wiser *not* to measure. Mirowsky and Ross state: ‘Psychological distress is probably one of the most difficult concepts to measure.’” (Yunas 2004:5)

“One of the problems we have today is that people have much knowledge but actually fail to care effectively for patients as people. If new entrants into the health profession could learn to care respectfully for patients and one another and learn to deal with suffering rather than pain, before experiencing the power of knowledge, status and money we may solve some of our problem.” (Fehrsen 2001:1)

6.1.3. Alternatives to the biopsychosocial model: a non-reductive, non-materialistic ontology

If and when the biopsychosocial model falls short of a holistic ideal by remaining ontologically founded in a materialistic monism, it might be possible that alternative ontologies, which are non-reductive and non-materialistic, will replace the existing materialistic monism of the medical school. Two broad categories exist: non-theistic and theistic.

Naturally, such a shift would be resisted by those who consider modern medicine to be successful, and hence would be reluctant to change it. It would also be resisted by those who would not be willing to accept a non-materialistic ontology or even an ontology that considers the supernatural to be real. On the other hand, those who welcome such a revision would be those who see the limitations of modern medicine’s ontology and epistemology, and would see this process as an opportunity to re-humanise medicine through recognizing the individual in all the facets of his or her life – and not just the body.

Is such a move toward a new ontology in clinical practice on the cards? With regard to a non-theistic perspective, a contemporary example I refer to is Kriel's (2000) *Matter, Mind and Medicine*.²⁸ . Jacques Kriel's project was to understand consciousness in a non-dualistic and non-reductionist manner as a way forward in transcending his analysis that the ontology of the modern medical school is materialistic monism. As a solution, Kriel offers a different ontology wherein reality is a complex hierarchically organised system of complex systems. Like all new paradigms, as expressed in Van Niekerk's comment below:

“Consciousness is the phenomenon [that] primarily distinguishes the human person from the rest of nature and other living entities. But here again Kriel is at odds with traditional wisdom. A transformed conception of medicine's clinical method requires not only a transformed view of science and reality, but also a transformed conception of consciousness, or, to use the terminology [that] Kriel prefers, conscious organisms ... Kriel challenges the idea that consciousness is an epiphenomenon of physical components of living organisms, for example the human brain. Taking evolutionary biology as his point of departure, Kriel persuasively argues against an epiphenomenal conception of consciousness. Consciousness is not the culmination of an evolutionary process. It is an inherent aspect of all living organisms throughout the evolutionary process. From the moment that the evolution of living matter occurs, the evolution of consciousness starts to develop. Human consciousness is a complexification of animal consciousness, which in turn is a complexification of the phenomenon of what Kriel calls ‘non-consciousness awareness’ of all living forms, including plants.” (Van Niekerk, in the foreword to Kriel 2000:xii)

This approach to describing a non-reductive, non-materialistic reality has also most recently been elaborated by Kauffman²⁹ in an article on www.edge.org called *Beyond Reductionism: Reinventing the Sacred* in which he argues his point from a non-theistic frame of reference for a new scientific worldview beyond reductionism. This non-theistic, non-reductive, non-materialistic paradigm attempts to explain a dimension, which I will refer to as the

²⁸ Another example goes as far back as ancient times when Aristotle rejected Plato's dualism by not making the ‘form’ an epiphenomenon of matter.

²⁹ A professor at the University of Calgary. An emeritus professor of biochemistry at the University of Pennsylvania. He is the author of *The Origins of Order, At Home in the Universe: The Search for the Laws of Self-Organization*, and *Investigations*. He is also the leader of the Institute for Biocomplexity and Informatics (IBI).

'relationship realm': The 'relationship realm' is real, an 'ontology of life', which is both personal and interpersonal. This is the only realm or dimension of reality through which we can ultimately understand 'caring' (Sam Fehrsen, as cited in Kriel 2000). The realm of relationships is neither supernatural nor natural. It cannot be understood in a two-dimensional drawing, at the very least, it needs a reconceptualisation that is three-dimensional. It is the realm that allows us to develop the empathy required of us as health professionals in order to alleviate the suffering of our fellow man, who happens to be our patient.

"If only atoms are real, how can we respect persons, relationships, feelings, attitudes, and life?" (Kriel 2000:xx)

"Our life-stories are reduced to anecdotes." (Fehrsen, in the foreword to Kriel 2000:xxiv)

Also within this relationship realm, we have a restoration of teleology, and in our case the restoration of the doctor-patient relationship. By contrast, in a mutual relationship between two mature human beings, we know that the relationship can be sustained only if we both acknowledge something that has authority over both and if each trusts the other to acknowledge this. In other words, we must treat the other person in accordance with the purpose for which he or she exists and not as an object to be used for our own purposes. (Newbiggin 1997:86). However, what validates this relationship realm?

"I have suggested the ways in which the concept of purpose becomes more and more necessary as we ascend without a break through the realms of physics, chemistry, mechanics, and biology to the human person. I have reached a place where one could say that there are pointers to the fact that we cannot stop with the human level and that human conversation itself becomes inexplicable without reference to something beyond itself." (Newbiggin 1997:86)

If we are to validate a human anthropology, then we need to move away from a reductionist and materialistic understanding of the biopsychosocial model. Such reductionism makes it easy to slip into the materialist monism of the biomedical model. However, the challenge of accepting a non-reductionist and non-materialistic understanding is also that such an understanding opens up the ontological question of the existence of 'God' or 'gods' as real ontological entities from which human beings derive an anthropological identity.

The biopsychosocial-spiritual model has become a more frequently used phrase, at least in palliative care. However, the danger of transcendence to the spiritual dimension is that we could revert to a dualistic animism in which we ascribe causality to the spiritual dimension, and would therefore seem to be 'regressing' as far as the conceptions of 'modern' man are concerned. Many in 'alternative' medicine are making claims to derive their healthcare provision from their 'spirituality' e.g. chiropractic homeopathy, acupuncture, and yoga or traditional 'pre-modern' medicines. We need to consider whether their ontological view does not over-emphasise the spiritual realm, and so have the potential to depersonalise human beings in much the same way as materialistic monism.

It would be interesting to conduct a longitudinal study of all medical students and study how their religious faith empowers (or disempowers) them as they progress through medical school, and how it influences their thoughts around healing and suffering. The kinds of questions one could consider are: Does being religious make one a more humane doctor? Does it make one more empathetic towards patient's experiences? Does it enable one to cope better with suffering?

Elizabeth Kubler-Ross (1993) puts forward certain psychological stages one goes through as one faces death: anger-denial-bargaining-acceptance. Although death is physical, during the phase of acceptance new symbolic meanings are created to explain and make sense of the process. Acceptance implies a courageous act of transcendence. This reflects the real embodiment of spirituality; an embodiment of that which is distinctively human. (McAuliffe 2000).

Bibliography

1. Aiken, L.H. 1999. Effects of organizational innovations in AIDS Care on burnout among urban hospital nurses. *Work and Occupations* 24(4) 1999
2. Bateman, A. 2001. Doctor burnout silent and fatal, *South African Medical Journal*, Feb, Pg 98-100
3. Bibeau, G. 1999. *Modernity, Suffering and Psychopathology*, Canadian Institutes of Health Research, www.chsrf.org
4. Bourdieu, P. 1990. *The Logic of Practice*, Polity Press, Oxford, 1990
5. Cassell, E. 1991. *The nature of suffering and the goals of medicine*, Oxford University Press, Oxford
6. Cilliers, P. 1998. *Complexity and Postmodernism: Understanding complex systems*, London, Routledge, 1998
7. Cilliers, P. 2000. What can we learn from a theory of complexity? *Emergence*, 2(1), 23-33, Lawrence Erlbaum Associates, Inc.
8. Cohen, S. 2001, *States of Denial*, Polity Press, Cambridge
9. Engelhardt, H.T. 1986. *The Foundations of Bioethics*, Oxford University Press, Oxford
10. Fehrsen, S. 2001, *Quality, Learning and Hope in Developing Health Services*, (Unpublished article)
11. Fleischmann, K. 2002. Cadaver Use and Coping Mechanisms in a Biomechanics Laboratory, *Omega*, Vol 46(2) 117-135, Baywood Publishing Co, New York
12. Foucault, M. 1972. *Archaeology of Knowledge*, (trans. A.M. Sheridan Smith), Pantheon Books, New York
13. Frankl, V. 1984. *Man's Search for Meaning*, Simon & Schuster, New York
14. Gijsbers, A. 2002. Science and Spirituality: Allies or Enemies in the delivery of healthcare. August, *Luke's Journal Supplement*, www.cmfd.org.au/luke/2002sciencespiritual.html
15. Greger, M. 2005. *Gross Anatomy (Appendix IIa)*, <http://www.upalumni.org/medschool/appendices/appendix-11a.html>
16. Gustavson, N. 1988. The effect of human dissection on first-year students and implications for the doctor-patient relationship. *Jour. of Medical Education*, 63, 62-64.
17. Hafferty, F. 1988. Cadaver stories and emotional socialisation of medical students. *Journal of Health and Social Behaviour*, 29, 344-356.

18. Hanock, D. 2004. Impact of Cadaver Dissection on Medical Students, New Zealand Journal of Psychology, [March](#)
19. Hauerwas, S. 1990. God, Medicine, and Suffering, Eerdmans Publishing, Michigan
20. Howe, A.2004. New perspectives-approaches to medical education at four new UK medical schools, BMJ, 329, 327-331, August
21. Illich, I. 1975. Limits to Medicine: Medical Nemesis, the Expropriation of Health Medical Nemesis, Boyars, London.
22. Kent, A. 1994. 'Medical education and the importance of teaching medical teachers about teaching', M.phil dissertation, University of Cape Town, March
23. Keynes, J.M. 1972. Essays in Biography, "Newton, The Man" The Collected Writings of John Maynard Keynes, Volume X, MacMillan St. Martin's Press, The Royal Economic Society
24. Koop, C. 1976. The Right to Live, the Right to Die, Wheaton, Illinois: Tyndale House Publishers, Inc.
25. Kriel, J. 2000. Matter, Mind and Medicine, Rodopi, Amsterdam
26. Kubler-Ross, E. 1993. On Death and Dying, Collier Books, New York
27. Kuhn, T. 1962. The Structure of Scientific Revolutions, University of Chicago Press, Chicago
28. Marx, K, 1977. Preface to the Contribution to the Critique of Political Economy, Progress Publishers, Moscow.
29. Mckusick , L. 1986. 'What to do about AIDS', University of California Press
30. McWhinney, I. 1997. A textbook of Family Medicine (2ed), Oxford University Press, Oxford
31. Meilaender G.C. 1995. Body, Soul and Bioethics, University of Notre Dame Press, Notre Dame
32. Murray, R. 1994. Science and Theology, Eerdmans
33. Newbiggin, L. 1997. Foolishness to the Greeks, Eerdmans Publishing, Michigan
34. Pellegrino, E.D. 1979. Humanism and the Physician, University of Tennessee Press, Knoxville
35. Pilgrim, D. 2002. The Biopsychosocial model in Anglo-American Psychiatry: Past, Present and future? Journal of Mental Health, Vol 11, No.6, pg 585-594
36. Polanyi, M. 1958. Personal Knowledge, University of Chicago Press, Chicago
37. Puchalski, C. 2003. A clinical guide to supportive & palliative care for HIV-AIDS 2003 Edition, Ch 13 Spiritual Care
38. Rhodes, P. 1976. The value of Medicine, Allen & Unwin Ltd, London

39. Sawday, J. 1995. *The Body Emblazoned: Dissection and the Human Body in Renaissance Culture*, Routledge, London.
<http://www.hull.ac.uk/renforum/v1no2/leach.htm>
40. Schei, E. 1992. The importance of being a person. Ethical and existential dimensions of medicine, Bergin University,
<http://www.uib.no/isf/people/doc/beingperson.htm>
41. Simon, S. 2002. *Preformations*,
<http://people.unt.edu/sjs0002/documents/PREFORMATIONS.pdf>.
42. Spiro, H.M. 1992. "What is Empathy and Can It Be Taught?" *Annals of Internal Medicine* 116: 843-846.
43. Spiro, H.M. 1996. *Facing Death*, Yale University Press, New Haven
44. Schulz, R. 1978. *The Psychology of Death, Dying, and Bereavement*, Addison Wesley Publishing
45. Tauber, A.I. 1999. *Confessions of a Medicine Man*. MIT Press
46. Tiner, J.H. 1975. *Isaac Newton — Inventor, Scientist and Teacher*, Mott Media, Milford (Michigan)
47. Van Niekerk, A.A. 1999. *Modernity, Mortality, and Mystery, I* *Philosophy Today*, Fall, Vol 43, Number ¾, 226-242, Chicago
48. Van Niekerk, A.A. 1999. *Death, meaning and tragedy*, *S.Afr.J.Philos* 1999, 18(4)
49. Welsby, P. 1999. *Journal of Evaluation in Clinical Practice*, 5, 2, 125,
Reductionism in medicine: some thoughts on medical education from the clinical front line
50. Yunas, M. 2004. *Journal of Musculoskeletal Pain*, Vol 12(2)