

This book is dedicated to

Robert K. Ferrie

Medical doctor, EMDR therapist and my husband of 34 years who in 1997 cured me in a single EMDR session from a writer's block which was trauma-induced three decades earlier. Without him and EMDR* I would never have published a word.

And

Julia Woodford

My intrepid truth-loving editor at *Vitality Magazine* in Toronto who provided me since 1999 with the soap box from which my monthly articles have gone forth into the greater Toronto area ever since.

* Look up www.EMDR.com

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Acknowledgements

I am especially grateful to my husband, for many years a urologist and surgeon, now a psychotherapist specializing in EMDR and the treatment of extreme trauma for being a living in-house medical dictionary. He opened up the language of medicine for me and enabled me thereby to read its primary literature and the related sciences.

The many doctors and researchers I have interviewed over the years have all contributed to my understanding in wonderful ways. For the purposes of this book a few must be singled out from amongst them all. They all are heretics. That word derives from the Latin *haereticus* and means “choice”. A heretic is one who chooses to question authority, examine alternatives, and refuses to let the status quo determine his or her actions. For me and them heresy is the greatest of ethical virtue.

If Professor Boyd Haley, the famous toxicologist and expert on heavy metals, hadn't told me that my illness, Myasthenia gravis, is by no means “idiopathic” (of unknown cause), but can be caused and triggered by mercury amalgam, I would probably not be around anymore and would certainly never have written a single article, leave alone this book. His personal advice and professional research taught me that the concept of “toxic dump” requires redefinition to include our very own bodies.

Dr. Jozef Krop not only restored my health and that of my pesticide-poisoned son Bryce, but was the first of many great heretics who showed me that standard medicine is dying and why that is a welcome development for human health. A great “Aha!” moment was for me when Dr. Krop slapped his hand on that mighty, learned, internationally recognized and obeyed, shoulder-dislocatingly heavy textbook, *Harrison's Principles of Internal Medicine*, and said, “The whole of *Harrison's* has to be rewritten, now that we know what we know about environmental causes of all illness.”

Similarly, Dr. Abram Hoffer caused an intellectual epiphany when he observed in passing, “Doctors are not trained as scientists. Medical training teaches cookbook

medicine.” Dr. Sherry Rogers, the indefatigable writer on environmental medicine has become one of my most trustworthy sources information through her indispensable monthly newsletter *Total Wellness* and her marvelous powers of explanation which make interviewing her a pleasure.

Dr. Michelle Brill-Edwards, Canada’s great medical activist, began my political education by introducing me to the dark side of medicine; she proved to me step by step just how bad corruption can get in the regulatory process at Health Canada as well as in the rest of the world. She also began to teach me how to develop an effective attitude to this mess. Dr. Nancy Olivieri, Dr. David Healy, and Health Canada’s Dr. Shiv Chopra and Dr. Margaret Haydon showed me through their work and the stories of their struggles that ethics continues to be the indestructible guiding force in medical science – in spite of all the skullduggery. Speaking of which – Croft Woodruff’s Vancouver-based e-mail information service on environmental, medical , and scientific corruption and the new and helpful action that is increasingly emerging to combat it, has become the equivalent of my daily newspaper.

A special thanks to Professors Maxine Kleindienst and Ursula Franklin, both at the University of Toronto in the 1980’s when I was studying prehistoric archaeology and physical anthropology. They suggested their students read Ilya Prigogine’s *Order out of Chaos* (1984) and James Gleick’s *Chaos* (1988). Nothing makes sense in nature (and certainly nothing in medicine) until one gets a grasp of Complexity Theory and understands what non-linear dynamics really means. I hope the reader will share the exhilaration such understanding can cause when applied to medicine (see chapter 3).

INTRODUCTION

So, who is this book for?

It is not for patients who believe and trust their doctors unconditionally. Health and illness are far too important to entrust to the medical profession most of whom are not aware that they have a sign on their backs which reads, “Don’t follow me, I am lost too.”

It is also not written for doctors who uncritically believe their medical journals, unquestioningly trust practice guidelines, and get most of their medical upgrading information from drug company representatives. This book is for patients who have lost faith in the quick fix and for doctors who have also discovered this and often are in despair. Indeed, research shows that amongst all professions, doctors are the unhappiest and most would not have become doctors had they known what a medical life would be like (see chapter 4).

Over the past years of writing articles about the politics of medicine, the two questions my readers have asked me most frequently have been: “How does one know what information to trust?” and “Where do I find a doctor who knows about the things you write about?” Since all the information I write about, without exception, comes from mainstream medical research and medical conferences, answering the first question has usually not been too difficult when the context was narrow; after all, there are specialists who are internationally respected, whose research publications were independently financed and whose work is available not only in the technical literature, but often also in excellent books and articles which anybody can understand.

The answer to the second question depends usually on the location of the person asking it, and my Rolodex frequently solves that problem quickly. Attending as many medical conferences as I do and having the privilege of interviewing so many medical researchers and practicing doctors in several countries, naturally resulted in a large list of addresses.

And then there is the Internet – the greatest invention since the printing press and the telephone – which, with a few suggestions as to who and what to look for, allows access to doctors, clinics, and information on treatments from all over the world at the click of a key. Researching on the Internet is a trip through the labyrinth of the human mind past, present and future, which, instead of leading you to a sterile center and the claustrophobic problem of how to get out again, leads you into wide open spaces of understanding and from one liberating “Aha!” to another.

As the years went by, my articles explored medical science more and more by following the paths leading into the enormous shadows medicine casts. Imagine a light cone on a dark stage. Everything within that cone of light coming from above, the action is bright and clear. Outside that circle everything is black and one assumes that because we cannot see anything, that there is nothing there – until a curious person steps out of that circle of light and into the darkness; once the eyes adjust, one is able to see whatever lies in those shadows.

My natural inclination has always been towards doubting authority of any kind, and so my curiosity and doubt led me to explore what goes on in those shadows outside the circle of the great light of modern medicine. There I keep finding the stuff of nightmares. Personally, the immediate benefit I have derived from exploring these awful truths, has been an understanding of my own illnesses and especially the insight into why most medical care I received was neither scientific nor real care. This exploration also allowed me to prevent some certain disasters for my family.

I discovered, that trustworthy sources can often unknowingly provide information that is totally false, because those from whom this information often comes, are very skilled at packaging their dross so that it passes for gold. The opposite is equally true: known liars and crooks can suddenly provide the most amazing insights into what is useful and true. There was a time when both patient and doctor could turn to standard textbooks and the flagship journals of the various medical specialties and get the reliable information of the day. Today, most information in medicine is so tainted - “all is seared with trade”, to

use a phrase from the 19th century poet Gerard Manley Hopkins - that both patients and doctors have to have the skills of master detectives to find something really helpful.

The House of Medicine is undergoing a renovation that should more properly be seen as a revolution or even a speciation event. Doctors and patients are moving about in an enormous building site and would be well advised to wear hard hats and metal-toed boots. Unfinished buildings are potentially dangerous. Improperly supported theories of disease and treatment are as deadly as unsafe scaffolding. The difference between a real building site and the present House of Medicine is that the former has signs posted everywhere reading "Keep Out! Danger!" while the latter, without fail, demands at some point in our lives an inescapable visit from each one of us without any protection at all. An encounter with medicine is as certain as life and death. One may go through life and never enter a church, fly in an airplane, or travel to distant parts of the planet, but everybody is going to get sick at some point, be in the hands of a doctor, and enter a hospital.

I get a lot of mail and always take a lot of trouble answering those letters and e-mail queries. One night last year, after having answered many such letters, I had a dream in which I was discussing some medical questions with somebody I was unable to recall when I awoke. But his answer stuck. He said, "Today, Hippocrates is wandering in the Land of Oz, and yet we are in the Golden Age of medicine." This puzzling observation required careful examination. The careful consideration of dreams have been central to my life for many decades (many times a dream saved me from some medical disaster or guided me in a difficult situation), so I made the time to return to my books on ancient Greece and read a lot about the history of medicine. This book is the result of those meditations.

Since I have an unshakable faith in science, having never been disappointed by good science, I hope that this book will be of some use as a guide through the enormous and perilous renovation site of the House of Medicine. A guide does not provide definite answers but acts as a map in a living landscape. The details and the personal experiences

made on the journey will differ, but there are clear structural outlines which will never change and have supported the work of medicine for thousands of years and will continue to do so for as long as creatures live and suffer.

This is a self-help book only in the sense that it hopefully will empower the reader to trust his and her own instincts. Hippocrates taught 2,500 years ago: “A wise man ought to realize that health is his most valuable possession and learn how to treat his illnesses by his own judgment.” That’s where I am heading.

Chapter 1 will engage you in a discussion about the nature of a Golden Age, why I believe medicine has entered such an era, and what in my view one needs to watch out for in such heady times which invariably produce terrible disasters as well as the grandest of triumphs. It is vitally important to understand the nature of a Golden Age if one is to emerge from it unscathed. I will also tell you the story of *The Wizard of Oz* as a metaphor for modern medicine, and finally, you will also be introduced to the Great Doctor, Hippocrates.

Chapter 2 provides a trip through the Devil’s Kitchen of modern drugs; this is the most dangerous part of this great building site: the scaffolding is rotten, the building materials are piled dangerously high, visibility is compromised, mudslides are likely, too many workers with too little basic training are working there, and their various foremen are all fighting with each other instead of supervising the action. I thought there should be a sign at the entrance to this section reading “Give up all hope, ye who enter!”, as at the entrance to Hell, according to Dante’s *Divine Comedy*. However, after some serious thought, I decided the sign should just read “Little Shop of Horrors” - like the one I have in my office, painted in careful calligraphy by one of my daughters who understands the nature of my work and shares my black sense of humor. Why just “little” instead of “huge” - seeing the most up-to-date research into causes of death places properly prescribed drugs as likely to be the primary cause of death in North America? Well, chapter 3 attempts to explain why there is reason for optimism and that there is reason to believe that the spirit of Hippocrates is immortal and indestructible.

Chapter 4 is devoted to doctors as they see themselves and as patients see them; this chapter discusses the geniuses and the life-threatening ignoramuses - and how to tell the difference when you are looking for a doctor; this is more difficult, I have found, than one would expect. Chapter 5 analyses what it is to be a patient and suggests how to cease being patient appropriately and effectively. Chapter 6 is an interview with Sir William Osler (born 1849) who by unanimous consent among medical historians is considered one of the greatest physicians in the history of medicine. The fact that he died in 1919 did not deter this great Canadian from graciously granting me a long and thoughtful interview.

Hopefully, the extensive resource section and the bibliography will prove useful as well as helpful.

Sources:

- B. Pomeranz et al. *Journal of the American Medical Association*, April 15, 1998 (on deaths by properly prescribed drugs)
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CHAPTER 1

Hippocrates, the Wizard of Oz and Our Golden Age of Medicine

Hippocrates, being one of those great white dead males, is nobody's idea of hot news. The Wizard of Oz in his Emerald City is a disturbing story of make-believe within make-believe, entrapment and betrayal resolved by a feisty child. The assertion that we live today in a Golden Age of medicine is either an advertisement paid for by a pharmaceutical company or a black joke. But maybe this ancient doctor and that modern imposter Oz may have something useful to say to us. And a Golden Age may, upon closer examination, turn out to be our unexpected home as well as our great adventure.

Hippocrates

Some 2,500 years ago in ancient Greece, medicine began to become a science, or *techne*, a word from which our words technique and technology derive. Fifth century Greece is universally acknowledged to have been one of those Golden Ages whose characteristic feature it is to bring forth insights of timeless importance. An idea born in a Golden Age is golden because it never tarnishes or loses its value, because it continues to be relevant, no matter how the circumstances change.

Hippocrates and his school taught a philosophy of medicine that was revolutionary in its own time, and it continues to be a theoretical and ethical challenge to this day. Greek ideas about medicine are the basis of medicine as we know it, and they are today becoming once again of special importance, because we need to find a way to deal with the evolution of new illnesses that have evolved since the discovery of bacteria. We need to study Hippocratic ideas especially today because so much in modern medicine has turned out to be a spectacular failure. In such periods of confusion it is helpful to retrace one's steps and get back to basics in order to find a useful new attitude. Patients and doctors are eternal in the human scheme of things. Therefore, ancient insights, such as those coming from the school of Hippocrates, are relevant partners in any dialogue on medicine which always has and always will have to deal with situations that change very little over time. Reading the Hippocratic writings today can be startling because of their

relevance to the problems medicine faces today, particularly in the domain of ethics – the very domain in which modern medicine makes its greatest blunders.

Techne in Greek implies the rational interaction with matter and a systematic elucidation of cause and effect - in contradistinction to archaic magic, which disregards causes and instead attempts to control inscrutable forces through rituals. Magic is not a verifiable process with predictable results; magical practices cannot be subjected to a controlled study. The Greek doctor Hippocrates is generally thought to have been the one who brought the practice of medicine out of the muck of magic and its archaic rituals and moved its practice into the domain of reason. Looking at illness and therapy as being subject to cause and effect, which the rational mind may comprehend, robs fear of its power to overwhelm and confuse. Both doctor and patient enter into a conversation with nature, while in the world of magic nobody knows what hit them, and the source of illness and recovery is fundamentally unintelligible because magical reasoning is totally circular: if the patient recovered, it must have been because the ritual was done properly; if the patient died, something in the ritual was wrong.

Because the mind of humanity is much like an often renovated and expanded large old house, archaic attitudes continue to be part of the stuff stored in the attic or the basement of the human mind. Just as such a building carries within itself the past, so our thinking is always partly of the past, the present as well of the future. So, filtered through three millennia of the Judeo-Christianity tradition, this archaic conception of inscrutable magical forces, always ready to get us, has taken on the additional layers of guilt and retribution. Most of us have at one time or another asked, like Job did in the Old Testament, “Why me?” or worse, “What have I done to deserve this?” Hippocrates would probably reply, “Stop adding to your misery by imagining it to be a personal attack.” Indeed, this is the most helpful advice any patient can get.

We also often now find this archaic thinking *disguised* as science, which makes it doubly harmful because it *appears* reasonable, when in fact its internally consistent reasoning is its only claim to logic; in fact, its premises are not much different from archaic

superstition: I am referring to the medical concept of a disease being “idiopathic”, which means “cause unknown”. Even worse than the admission of ignorance this term implies, is that magical formula (which is no better than the authoritative pronouncements of a witch doctor) we so often hear, without any supportive evidence, namely the assertion that a condition has a “genetic basis” or is a putative “chemical imbalance” to be rectified by taking some synthetic chemical of little-known biochemical action. Genes easily take the place of ancient demons and chemicals can provide, due to their complexity, a convenient hiding place for stupidity. It is high time, in this era of chronic diseases, that we return to the Hippocratic insistence that every disease has a cause that is knowable and take up again the search for those causes, instead of merely classifying symptoms, exploring and getting lost in the labyrinth of microscopic complexity, and “managing” disease.

There is no suggestion here, that we simply have to return to the teachings of an ancient hero by re-examining Hippocrates’ thought. In any case, no historical movement - beneficial or tyrannical - can ever be thought of as being caused by just one person; a receptive intellectual environment is essential for any idea to germinate and grow into a historical process. If a new idea does not resonate with the people of its time, it disappears at least temporarily until the time is ready for it. In Plato’s *Timmaeus* the notion was put forward that diseases are caused by tiny creatures invisible to the eye, a theory developed further by the second century BCE physician Varro.* Sixteen hundred years later, the Dutchman Antonie van Leeuwenhoek (1632-1723), known to us from his friend Vermeer’s great painting entitled “The Geographer”, invented the first microscope. He scraped his teeth with a fingernail, placed that little pile of goop under the lens, and was astounded to see creatures fit for a nightmare – sadly, nothing useful for medicine came of this until more than a century had passed. Similarly, the monk Gregor Mendel discovered the activity of genes in his famous experiments with peas and sent his observations to Charles Darwin, but the latter was unable to see the significance of these

* BCE stands for “before the common era”, instead of the old-fashioned BC, which means “before Christ”; the customary AD (Latin: *anno domini* = the year of our lord) has been retained for periods after the year 1 to avoid confusion. Most references to people before the present assume the male gender because women did not figure significantly in medicine in antiquity.

studies to his own theory of evolution. Louis Pasteur observed famously that “understanding only comes to the prepared mind”, to which one should add that the acquisition of real knowledge on a collective scale takes a great many prepared minds willing to think together.

Hippocrates taught that the air we breathe, the water we drink, the food we eat and the houses and geographical areas we live in can contribute to virtually all diseases, and that understanding and controlling our environment is central to regaining health. Strangely, this notion is to this day revolutionary and even downright heretical, in spite of the last four hundred years of supportive evidence piled up about the environmental degradation initiated by the Industrial Revolution. Clearly, a lot more minds need to be prepared to cause change on the planetary scale, since the world is our fish tank – with finite boundaries and finite supplies for survival. Readers who have had their immune systems injured by pesticides, solvents, carbon monoxide or heavy metals, such as to become completely disabled and forced to seek disability benefits from the government, know only too well the blithe denial with which a diagnosis of Multiple Chemical Sensitivity tends to be received - regardless of all the medical evidence and the known facts of toxicology. Hippocrates would have had no difficulty with this condition.

Medical historian Sherwin B. Nuland’s description of how doctors trained by Hippocrates understood their task is of startling relevance today: “The Hippocratic physicians saw diseases as events that happened within the context of the life of the entire patient, and they oriented their treatment towards restoration of the natural conditions and defenses of *the sick person and the reestablishment of his proper relation to his surroundings.”

Classical scholar Edith Hamilton observed that Hippocrates enunciated his theory of medicine in a culture that had “abolished magic” as far back as in the time of Homer in whose epics, the *Illiad* and the *Odyssey*, magic is dismissed as unworthy of human intelligence. As a result, when Hippocrates taught some 500 years later, he had a receptive audience, even though magic and archaic rituals were still thoroughly part of Greek culture. Hamilton cites an early Greek philosopher who wrote just before the time

of Hippocrates, “All things were in confusion until Mind came and set them in order.” For example, in Homer’s epics, when night comes, Hamilton observes, even the gods go to sleep because both heaven and earth are rationally ordered. For the Greeks, unlike other ancient cultures (except China), humanity - not divinity - was the central value from which everything derived its relevance and authority. When we no longer see ourselves as created in the image of an inscrutable and all-powerful deity, we are required to examine our humanity more carefully. We then realize, that the Here and Now and our basic human needs are all that really matters.

Yet, it does require an individual to put into words what is already half formed in many contemporary minds. Hippocrates was undoubtedly a historical person. He was born on the island of Kos around 460 and died about 370 BCE. His life was contemporaneous with Socrates, and Plato refers to him in his *Protagoras* and *Phaedros*. Aristotle was teaching in Athens when Hippocrates died, and it was Aristotle’s student, Alexander the Great, who was largely responsible for spreading the concepts of Greek medicine throughout the known world with his conquering armies. Hippocrates lived for some years under the rule of Pericles. The great dramatists Aeschylus, Sophocles, Euripides and Aristophanes were all his contemporaries.

He founded his famous medical school on the island of Kos from which Greek doctors graduated for many centuries. In a fundamental departure from the system of his time, which required students to wander with their medical teacher through the country from patient to patient like an internship on foot, the medical school on Kos was designed as a teaching hospital or a clinic, a system we take for granted today. (The word clinic comes from the Greek *kline*, meaning the sickbed.) Even more startling is the fact that the Kos medical school had no temple until many centuries later.

As Nuland observed, “The teachings of the Hippocratic physicians came about in opposition to the supernaturally based precepts of the shrines” which were also typical of Greek medicine prior to the intellectual revolution of the Hippocratic school in the 5th century BCE. Illustrations 1 and 2 show the archaeological site as it is today and its

reconstruction as it may have appeared during Hellenistic times, several hundred years after Hippocrates' death.

The writings of Hippocrates consist of sixty treatises and were written between 430 and 320 BCE. Except for the *Aphorisms* and his famous book *Airs, Waters and Places*, which are generally thought to be his own, the rest were probably written by his students. Scholarly analysis has shown that these writings were part of a vast medical library accumulated over many centuries which also incorporated material from periods long before Hippocrates. The texts that have come down to us by various routes were originally compiled and kept in the famous library of Alexandria in northern Egypt, which in the ancient world served as the greatest learning centre for more than a thousand years; it was burnt down in 47 AD by Roman emperor Julius Caesar who serves as an early example for the uneasy relationship that characterizes politics and knowledge: they have always had mutually exclusive aims: politics by nature wishes to control; knowledge can only do one thing – liberate.

In modern times, Mao Tse Tung's massacres of intellectuals and scholars, Cambodia's Pol Pot in the mid-70's and the West Pakistani invaders of the future Bangladesh (former East Pakistan) in 1971 were reincarnations of Caesar: they burnt down the universities and libraries and lined up all they could find who held a BA or higher degrees and shot them. The current Bush administration in the USA is more sophisticated in its methodology but equally determined to prevent truth from making people free. As reported in the *New York Times* on February 24, 2004, sixty of the most influential US scientists, including 20 Nobel laureates issued a 38-page public statement, at a press conference held by the *Union of Concerned Scientists*, accusing the Bush administration of "systematically distorting scientific fact" in order to be able to pursue "policy goals on the environment, health, biomedical research and nuclear weapons at home and abroad" that are, to say the least, unhealthy for the human race, animals, plants, and the planetary support systems of life. The murderous methods these scientists described were the bloodless version Julius Caesar and Co.'s visible carnage, namely "censoring and suppressing reports, stacking advisory committees with unqualified appointees,

disbanding government panels that provide unwanted advice, and refusing to seek independent expertise.” Most important was the fact that these scientists included both Republicans and Democrats and even the presidential advisors from the ultra-conservative Nixon era and such conservative scientists as the former chief of the National Institutes of Health, Nobel laureate Harold Varmus.*

In the time of Hippocrates, the significance to health of air, water and places had not yet become politically charged. The superstitions of his age had to do with imagined supernatural powers – they were the terrorists and “rouge powers” of antiquity. Today, medicine that actually cures and prevents disease, and especially the findings of epidemiology (a branch of medical research first named and developed by Hippocrates and his school) present quite possibly the greatest challenge to present-day governments. Pericles and Hippocrates understood each other and had a common aim: a healthy population. By contrast, our governments today *actively support* the causes of all known illness, from malnutrition to AIDS. If Hippocrates came back for a visit to our time, he would doubtlessly be amazed to find a world dependent upon an economic system that has made illness - not health - a stock market commodity to be traded like gold and diamonds and making a profit almost as great as the weapons industry. He would be speechless when learning that government policy everywhere either ignores or actively supports this state of affairs.

Worst of all, so many physicians have sold out to the sickness industry, that my recent search on the issue of financial conflict of interest yielded, for just the prestigious British journal *The Lancet*, over 3,000 articles published in the past decade. Hippocrates would be dumbfounded if he learned that in September of 2001 the world’s leading medical journals issued a joint statement condemning the wholesale corruption of medical research by the financial interests of the drug industry. The new guidelines for publication require complete disclosure of potentially conflicting business affiliations and

* See www.ucsusa.org for more details and download from the *New England Journal of Medicine*’s site www.nejm.org the March 12, 2004 article by former White House advisor Elizabeth Blackburn; “Bioethics and the Political Distortion of Biomedical Science”.

- imagine! - the non-negotiable necessity of researchers writing the article themselves, instead of having it ghost-written by an industry hack.

Hippocrates would possibly be bemused by the following story from Washington DC and be forced to conclude that his observations in *Airs, Waters Places* of two thousand five hundred years ago have finally taken centre stage in world affairs: There is an organization called Strategic Forecast Inc. which was founded in 1996 and is located in Austin, Texas - where else? It describes itself as “the world’s leading private intelligence firm providing corporations, governments and individuals with geopolitical analysis and forecasts” to enable them “to manage risk and to anticipate political, economic and security issues vital to their interests.” One of its staff researchers, Bart Mongoven, works out of this corporation’s Washington DC office; his presentation to the National Petrochemical and Refiners Association in March 2004 was reported in the US Environmental Protection Agency’s magazine *Inside EPA*. Mr. Mongoven warned the oil industry about the “increasing collaboration between environmental groups and patient groups on the issue of exposure to chemicals. He said that “in five years, the environmental community would like to see *all* debates to be about the environment and health.” (So, what’s new about that, asks Hippocrates.) He wanted his audience to be especially concerned about the fact that patients and environmentalists were moving way beyond the issue of exposure to pesticides and beginning to focus now on the health impacts of industrial emissions (ever heard of Love Canal, Woborn, Bopal or seen “Erin Brockovich”?). He concluded with the advice that the petrochemical industry should focus their attention now on how to discredit these pesky patients and annoying environmentalists by portraying them as being “anti-chemical”. What exactly would “*pro*-chemical” look like? Back to the 50’s with DDT being sprayed on happy youngsters eating hot dogs? Ever read the EPA’s list of known and suspected carcinogens?

Mr. Mongoven obviously hasn’t studied history or he would have known that his observations are hardly news: from the 18th century poets like William Blake, the Luddites, and novelists like Charles Dickens all the way to Rachel Carson’s *Silent Spring*

in the 1960's, the environmental movement has always been about health and nothing but. The third generation of environmental activists has now been on the anti-chemical crusade - and winning to the point that the petrochemical industry is nervous enough to consult the likes of Mogoven, in the hopes that he can help them interpret the tea leaves for them. *

Hippocrates would be shocked at some of the new players and their power to destroy life, but he would recognize the issues as only too familiar. Like him - they are classic.

The End of Magic and the Beginning of Science

To appreciate the enormous intellectual breakthrough the Hippocratic school achieved, we need to look first at magical medicine in antiquity. (The residue of archaic magic in modern medical science will be explored in chapter 2.) In the 1960's I was fortunate to have had the opportunity to take the course in the history of medicine at the University of Zurich in Switzerland taught by the great historian Erwin Ackerknecht. This course was so famous, students of every discipline took it; one had to sign up for it way in advance of the first class to get a seat. His lectures were so interesting, one tended to forget taking notes. For Ackerknecht, Hippocrates was in medicine the equivalent of "a declaration of independence" because he and his school assumed that everything in illness and therapy is intelligible and subject to ordered causality.

The linguist and archaeologist Cyrus H, Gordon, when he wasn't digging up ancient cities or creating grammars for extinct languages, pursued as a hobby the study of the incantation texts written inside so-called magic bowls. They are found in great numbers throughout the ancient civilizations of the Near East, today roughly the Middle East or the area including everything from Afghanistan to Egypt. The largest collection of these

* See www.strafor.com and contact the *Centre for Media & Democracy* for their reports on "disinfopedia" through bob@disinfopedia.org, an organization that "provides an encyclopedia of people, issues and groups shaping the public agenda".

date back to Babylonian times and are found as recently as in the 6th century after Christ. They became common more than a millennium prior to Hippocrates and continued to be popular for almost 900 years after his time. Most of these bowls are written in Aramaic, the language Jesus spoke, which was the universal language of its day from India to Egypt for more than a thousand years, rather like English which is the world language today. By comparison, Greek was spoken by very few people. It is highly likely, that Hippocrates and many of his patients spoke Aramaic as well, especially since their services were sought throughout the known world of that time.

The magic bowls are inscribed in a spiral manner, often inside as well as outside. Their purpose was to address malevolent spirits and exorcise them. Since the aim was to protect people, many of them invoke the power of Life itself with the formula “In the name of the great, strange, abundant, and lofty Life” and end the spell with the words, “And Life is victorious!”

Because it was unknowable just how many demons existed, and how many kinds of evil intent they were capable of inflicting on people, the texts listed large numbers of them in an effort to be as comprehensive as possible. Precision was key with regard to time, the evil to be avoided or healed, the persons seeking this protection, and the desired outcome. The myriad evil spirits were invisible, except, of course, through their harmful effects. If the magic bowl did not achieve the desired end, the magician could always blame failure on the infinity of powers at work; everybody would agree he had done his best.

Gordon describes how the magician wrote these incantations “on this day of all days, this month of all months, this year of all years, and this time of all times.” The demons being exorcized were the “Mighty Destroyer that kills a man from beside his wife, and a woman from beside her husband, and sons and daughters from their father and mother, by day and by night.” Some of these demons were known to “have a height of 170 cubits, and they sit on the roof spouts and kill children.” We are familiar with the contemporary version of this image in our Christmas song about Santa who “sees you while you’re sleeping/ he knows when you’re awake/ he knows if you’ve been bad or good”. In the

presence of this omnipotent force, that can exclude you from or include you in the bounty of Christmas goodies, children are admonished to better be good. Santa is indeed a seamless amalgam of archaic notions of inscrutable divinity and the religious guilt trip.

For each disease there was a separate demon and they were often portrayed in the centre of the bowl with an attending identifying legend. Protection had to cover all the bases: "...all the spirits, idols, strokes, curses, invocations, the curse, witchcraft, the evil and envious eye, and everything bad." The magician asserts that through this incantation "all the evil spirits are bound, hobbled, and crushed under the left heel of the client." Protection was to extend to every person in the household, every cow, sheep, slave, and the dwelling itself such that everything and everybody would be immune to "spells in Aramaic, Hebrew, Arabic, Persian, Greek and Roman and all the seventy languages either by women or men." Indeed, our modern legal language, as we know it from contract law, is modeled according to this ancient pattern with all its technical precision and all-out effort to cover every possible eventuality, in order to bind those signing the contract forever and ever, amen.

The following illustration (no. 3) of such a magic bowl comes from a collection in the museums of the University of Pennsylvania. The creature in the middle is the witch Lillith, a demoness who slays children. She is addressed as "O Murderess, daughter of a Murderess! Get out and depart from the presence of [name of the child]. The Sun has sent me against thee, the Moon has dispatched me [every possible stellar deity's name follows and is identified as the magician's assistant]. Get out ... so that sons may remain alive for their mothers and little children for their fathers."

I grew up in northern India and was quite familiar with magicians of every kind. In the 1960's, during my years in an international American high school in the foothills of the north-western Himalayas, magicians wandered through the bazaars and were readily consulted by the townspeople for every possible ailment. Often I would pass two people squatting by the road side - one with a sore tooth and a swollen cheek, the other rubbing

a small stick along the infected gum-line while reciting magical incantations probably as old as those in the Babylonian clay bowls.

Now let us turn to Hippocrates who instructed his students at Kos, “Each disease has a natural cause, and nothing happens without a natural cause.” (*Airs, Waters, Places* chapter 22.) No demons, no spirits, no inscrutable forces. Instead of trying to appear as a person endowed with magical powers, this new type of rational doctor observes, as Hippocrates does in his *Aphorisms*, “Life is short, the Art is long, opportunity fleeting, experience delusive, judgment difficult.” This paradox of humility combined with the relentless quest for rational comprehension is what characterizes the Greek contribution to medicine. No wonder then, that it was a Kos student, Praxagoras who identified the nature and importance of the pulse around 300 BCE and thereby proved that the progress of an illness could be objectively assessed.

The issue is not whether divine powers exist or not and whether they influence human lives. They may or may not. Making sense of human suffering, trying to understand the dynamics of illness, and seeking remedies, Hippocrates and his students began to arrive at a scientific consensus which amounts to asking one another, “Do you observe what I observed? Do we both see this phenomenon as real?” We are thinking like Hippocrates when we trust the observation of our senses, when we believe the patient’s description of the subjective experience of the illness, and when we verify our observations with others. That is when we have entered the realm of science, and then most of the fanged demons lurking in wells and squatting on roof tops prosaically wind up as not so different after all, but are classified as diseases with predictable patterns. Of course, it is also true that scientific medicine is often every bit as scary as the characters emerging from ancient magic bowls.

Perhaps the most important contribution of the Hippocratic school was the introduction of a fundamental medical axiom, namely the totally radical idea *that Nature is fundamentally benevolent and not malevolent; that Nature works in us and for us, not against us.* Nuland observes, “The Hippocratic physician understood that the power

which he called Nature is a formative, constructive, and curative power; the human body tends to heal itself. It is in unusual circumstances that the morbid causes can overwhelm the natural inclination of the organism, which is to reestablish the equilibrating rhythms of health.” Hence the famous Hippocratic order, that the physician’s duty is “to help, or at least to do no harm.” (*Epidemics*) This notion implies, that the doctor is empowered only to the extent to which he has understood Nature’s intent and assists her work.

With Hippocrates start the disciplines of nutritional medicine and epidemiology. Cutting through the infinite pantheons of beneficial and malevolent spirits, Hippocrates coined the word “epidemic” and observed, “When a large number of people all catch the same disease at the same time, the cause must be ascribed to something common to all and which they all use ... it is obvious that individual bodily habits cannot be responsible because the malady attacks one after the other, young and old, men and women alike...”

Doctors trained at the Kos medical school had to learn to observe everything from spit to urine, blood to pus, fever to shivering etc., instead of assuming that divine or daemonic powers were at work: “We must consider the patient, what food is given to him and who gives it ... the conditions of the climate and locality both in general and in particular, the patient’s customs, mode of life, pursuits and age ... his sweating, shivering, chill, cough, sneezing, type of breathing, belching, wind ... and [*most importantly*] we must determine the significance of all these things.”

Not surprisingly, Hippocratic doctors were quite successful. They taught people to drink clean water, recognize too much dampness or heat as causes of illness, and eat what we would now call a balanced diet. The keen observation for which Hippocratic doctors were famous, showed them that in order to lose weight one had to eat more fat (to slow absorption) and less what we now call carbohydrates – thereby pointing the way to the Atkins diet. When things got really nasty and surgery was needed, Greek doctor knew how to drain pus from a chest in pneumonia, even liver and kidney abscesses were diagnosed and effectively vented, as hundreds of case histories testify. They knew when to release pressure from the brain after an injury, and they understood wound infection

sufficiently to prevent it through the use of wine. Their case histories honestly record the successes and failures, the improvements and deaths with equal cool detachment.

The low mortality rate in Alexander the Great's army was unique and often commented upon in antiquity. The secret appears to have been the use of wine to clean wounds and to reduce complications in surgery on the battle-field. Wine kills *E. coli* and *staphylococci*, and we know from historical reports that the wine in Alexander's supply caravan was meant to be used primarily for true medicinal purposes.

Historian Guido Majno informs us that more than two thousand years later, the antiseptic properties of wine were first published by the Austrian military doctor Alois Pick in 1892 after he tested the observation made by a Dr. Rabuteau during a cholera epidemic in Paris. The latter had noticed that regular wine drinkers did not generally come down with cholera or typhoid. Dr. Pick placed typhoid and cholera bacilli in a flask with water and found they thrived there and multiplied; when he placed the same cultures into a flask in which half the liquid was wine, they all died. These observations were verified in the 1950's with these and many more bacteria.

The Origin of Medical Ethics

Hippocrates did for professional medicine what Pericles, at the same time, did for politics: he formulated the ideals of professionalism and of politics in terms of the concept of democracy, which is ultimately an ethical principle designed to empower the individual. The fact that humanity is still only barely approximating this ideal in both politics and medicine does not detract from the fact, that it is as real and fundamentally important as gravity. In both politics and medicine success is only that, when people feel free and empowered. Upon graduating, the *Hippocratic Oath* was sworn by medical students for two millennia, ever since the days of Kos. It is reproduced here.

In the time of Hippocrates, doctors were generally in very bad repute, and he writes of charlatans everywhere milking people for their money, harming their patients, and getting away with it. Hippocrates was the first major renovator of the healing arts. He wrote in a short essay entitled *Law*, “Medicine is the most distinguished of all the arts, but through the ignorance of those who practice it, and of those who casually judge such practitioners, it is now of all the arts far the least esteemed.” Hippocrates went on to say, “The chief reason for this [situation] is that ... many are physicians by repute, very few are such in reality.”

To remedy this sorry state of affairs, the school of Kos formulated a professional oath guided by Hippocrates’ ideas enunciated in his *Precepts*: “Where love of mankind is, there is also love of the Art.” Since we know that the historical Hippocrates was a contemporary of the great tragedian Euripides, it is tempting to suggest that these two were of like minds, one showing the universal human reality of suffering which the other through medicine hoped to reduce. In one of Euripedes’ tragedies the chorus speaks a few lines that could come equally from the heart of a doctor:

“[We] who feel the giant agony of the world.
And more, like slaves to poor humanity,
Labor for mortal god...’

The *Oath* established the ground rules of the profession. Some of the details are strictly relevant to the era of 5th century BCE Greece; such as the commitment by doctors to helping each other financially because patients could not necessarily pay, the Greek city states did not have a system of medicare until a century later, and some procedures were by a very long tradition of such a highly specialized nature, such as “cutting for stone” (today in the domain of urology), that the Kos-educated doctor was to leave those areas to others. The reference to abortion requires an explanation which Nulan provides by pointing out that abortion was such a commonplace in the ancient world, that the Hippocratic injunction against it must be understood in terms of the limitations in surgical skills in antiquity, which any doctor would have acknowledged. To this day,

abortion carries enormous risks and in antiquity this was even more so the case. Nulan suggests that the Oath was to ensure that all the known arts and skills of a doctor graduating from Kos should be used with extreme caution, always keeping the safety of the patient in mind. Regardless of which side one is on with regard to the abortion debate, medically this is a sound notion.

The essential ideas in this *Oath* are:

1. A doctor must always share his knowledge with all other doctors and teach his colleagues or students whatever he learned himself. He may not use medical knowledge for personal gain and medical knowledge may never become personal intellectual property.
2. Whatever the doctor does, must always be for the patient's benefit and above all he must avoid doing harm, such as taking undue risks, doing something without the patient's consent, or committing the sin of *hybris* (pride) by "attempting to cure mortality".
3. A doctor's conduct must be such as never to take financial, sexual or any other advantage of a patient or the patient's family (including the family's slaves!).
4. Whatever a doctor hears or learns about the patient and the patient's family must be kept in the strictest confidence – again to avoid any form of potential exploitation. This effectively confers priestly duties upon a physician.

The first theme here is the recognition that the doctor is *only worthy of esteem if he does not use his profession for the exercise of personal power* – over the patient, over medical knowledge, over specialized personal knowledge of a patient's family, and over his art in general, to become rich or powerful. Medical historian Roy Porter observed that unlike the practice of the healing arts in the rest of the "ancient Near East, elite Greek medicine

was not a *closed* priestly system: it was open to varied influences and accessible to outsiders, guaranteeing its flexibility and vitality.”

The second theme is that of *the primacy of the individual patient's needs over those of family or society*. Hippocrates would turn in his grave if he knew how thoroughly medicine has - in practice - betrayed that principle. Indeed, Hippocrates prefigures the philosophical principles of the premier Enlightenment philosopher Emanuel Kant, who taught in the 18th century, that the only sin a person could commit, was to subject another human being to purposes and for ends not consciously and willingly consented to. The subsequent anti-slavery movement and the formulation of universal human rights begin with the politicians of Kant's time. In the early 1960's, after the Nuremberg Trials had revealed the crimes against humanity committed by the Nazis in the name of medical research, the international community formally issued a guideline through the World Medical Association, that people cannot be subjected to experiments, drug trials, research projects and the like without consent – and sometimes not even with consent, e.g. toxicology experiments. Informed consent has been, ever since, the foundation of medical law and become part of the international Helsinki Treaty on human rights.

So far away has medicine moved from those ideals, that in 2002 the major medical journals of the world jointly published a set of recommendations following an international committee's findings on how to rebuild the ethical foundation of the medical profession. The text is reproduced in its entirety at the end of this chapter and makes for sobering reading. It's history and implications for medicine will be discussed in Chapter 4. Before turning to a discussion of this event, we need to consider the Wizard of Oz.

The Wizard of Oz

In the introduction I mentioned a dream in which the connection was established, metaphorically, between Hippocrates and the Land of Oz. It was not immediately clear

to me when I woke up what this could possibly mean. So, I decided to read Frank Baum's (1856-1919) story of Dorothy's journey to the Wizard of Oz, which was recently published in a special edition, celebrating its 100th anniversary. The illustrations by Charles Santore are exquisite. I remember seeing the classic 1939 film version with Judy Garland, when I was 7 or 8 years old, in a movie theatre in India. The film kept ripping and this was followed by the loud groans of the audience who then sat in the dark in breathless anticipation of the repair. When the screen lit up again after some time, everybody clapped and shouted, and Dorothy was on her way again to the Emerald City.

I vividly remember the disappointment I felt when the wizard turns out to be a fake. That was the first (of many times) that my world fell apart. Indeed, it was the first great disillusionment of my life. As a child one feels such experiences with extraordinary keenness. Repeated disappointments in life teach one to develop some emotional anesthetic upon which to draw when life deals a blow. A child is still quite defenseless, and so the memory of an event such as this one occupies a disproportionately large space in one's biography: so, yes - this was traumatic! My parents collected fairy tales from all over the world in their immense library. Having been raised on those, and on the seemingly inexhaustible treasure of stories from Indian mythology told by family friends and servants, it was quite literally beyond belief that the climax of *this* story revealed a monstrous phony. This was so disturbing, I hated *The Wizard of Oz* and never read the book until decades later, even though my parents had bought it for me. Almost forty years later, when I became very ill and had to strike out into medically unknown territory to regain my health, I finally read it and began to understand its many liberating metaphors.

The story opens with a cyclone lifting Dorothy and her dog Toto inside their house to the top of the cyclone far away from everything familiar and secure. This is exactly what happens when one falls seriously ill. A force of nature beyond anything ever experienced takes control and subjects us to an orderly process of destruction. The initial experience is one of total helplessness. One can't take one's body for granted anymore because it does unintended things, or fails to obey, without warning. The very flow of life is on

hold. After the initial shock and pain, it soon becomes clear that there is method to this chaos, which is further confirmed by a diagnosis and the prognosis – but, one has to have the nerve to ask for it, or muster the intestinal fortitude to read about the disease in some authoritative tome like *Harrison's Principles of Internal Medicine*. Of course, if one is blessed with a healthy dose of gallows' humor, one becomes dispassionately curious about this cyclone's nature that is so systematically devastating one's life.

Next, Dorothy suddenly finds herself wide awake in a totally different world and is informed by the Good Witch of the North that Dorothy's house has landed on top of the Wicked Witch of the East and killed her. Dorothy is naturally horrified at this, but surprisingly adjusts rather quickly. She consciously accepts an attitude of self-preservation which entails killing, if necessary, in self-defense. Dorothy is a good girl no more. Indeed, if Dorothy metaphorically represents a patient, her cold-blooded decision to put on the silver shoes of the witch she just killed, further emphasizes that she means to go on a long march from a standpoint of strength.* Witches are hidden archaic powers – we can draw upon good and archaic forces in ourselves if we are willing to recognize them. Fighting for your life is not necessarily a polite and civilized undertaking, and understanding one's situation correctly requires the powers of a good witch (a creature of power) who can overcome obstacles never thought to be conquerable. Shoes are also a nice metaphor for one's standpoint in life, and silver symbolically represents the moon and the feminine virtues of feeling. One needs the supporting strength of genuine feeling to get through this experience - denial won't do at all.

The meeting with the Good Witch of the North and the Munchkins also suggests to Dorothy what lies ahead, namely at the very least an encounter with one more bad witch *and* with one more good one as well, from the West and the South respectively - the counterparts of the two she just met. So, at least one more serious confrontation lies ahead as well as one encounter with a potentially helpful force.

* In the story the shoes are silver; the Hollywood movie made them red. The shoes Judy Garland wore in that movie were recently auctioned for several million dollars. Even photographs of them are copyrighted; the cost of using their image on the cover of this book was too high for me.

Dorothy does not understand yet that this is only the beginning of her adventure and that things always get worse before they get better, and so she naively insists she must now return to Kansas. She has had quite enough already by this time. Indeed, after one has received the diagnosis, the first reaction tends to be just like Dorothy's which amounts to a form of denial; one thinks life will now somehow return to normal. Of course, it doesn't and it can't and never will, regardless of the final outcome.

The next stage of Dorothy's adventure has a pastoral quality to it: she is greatly encouraged by friendly people who commend her for killing the Wicked Witch of the East, and she is informed that she herself must have some great powers, since white is the color of witches and blue the color of the Munchkins (her dress is blue and white checked). To me, this situation is rather like the period of medical investigations the patient enters into. Unless one meets with absolute emotional morons (unfortunately now often the case), nurses and technicians tend to be friendly and tell you invariably how good you look even if you feel like death, how brave you are even when you know you are scared out of your wits, and how all will be well if you do what is required of you, even though you highly doubt it.

If you have ever been seriously ill and this is not your first cyclone experience, you know, of course, what horrendous nonsense all of this is. Here we are in the emotional Flatland of convention - phony but somehow necessary, and real to the extent that nurses and technicians really cannot do anything else than be polite and encouraging. In any case, most of us can't handle reality undiluted and raw. In time, a diagnosis will emerge out of all this ritualized probing.

The big moment for Dorothy (and the patient) comes when the Emerald City is mentioned and she knows that this is the inescapable and necessary destination. The Munchkin Boq tells Dorothy that "it is a long way to the Emerald City, and it will take you many days. The country there is pleasant, but you must pass through rough and dangerous places before you reach the end of your journey." This sentence should be framed and hung in every doctor's waiting room. Naturally, this "worried Dorothy a

little,” the story continues, “but she knew that only the Great Oz could help her get to Kansas again, so she bravely resolved not to turn back.”

Since we know that Oz turns out to be an imposter, this inner certainty in Dorothy is a puzzle. In my interpretation, this is an important illusion which is necessary in order to get started on engaging the illness intelligently. Paradoxically, without the decision to look for the healer, one never learns how to heal oneself. Without this error, we never learn that it is not the doctor who cures, but that Nature provides both the cyclones as well as the subsequent calm, the illness as well as its cure; even when death is the outcome, that too, is Nature’s gift and must be accepted as such. The image of the Yellow Brick Road underscores this paradox. We know it leads to a phony Emerald City which is only emerald as long as one wears green glasses, and we know that the wizard is going to turn out to be just as phony. When the patient starts out on this journey, the Yellow Brick Road of modern medicine glows with promise, as all large collective institutions do.

Now the story begins to become fun, as Dorothy encounters the Scarecrow who pines for a brain, the Tin Woodsman who is worried he has no heart, and the Lion who believes he has no courage. Her three new friends function as externalized attitudes to medicine which are unfortunately too often internalized by real patients. All three represent typical attitudes of victimization. The Scarecrow in us is sure we don’t have the brains to understand all this confusing and scary information coming our way, we are sure we appear like total fools before these clever people in white coats who must know everything, and we seriously doubt we can even ask the right questions. Similarly, the Tin Woodsman in us is worried about not having a heart - not treating others with enough consideration; this illness is perceived not only as a personal calamity, one fears it to be an embarrassing inconvenience to everybody around. Such concern for everybody else but oneself can make one almost catatonic - frozen in action like the Tin Woodsman, who in the story can literally not move and needs to have oil administered to his joints, before he can even go on Dorothy’s journey. Similarly, mothers of young children go into states of outright panic: “I haven’t got time for cancer now!” A person with a neurological disorder, like Multiple sclerosis or Myasthenia gravis, can see on a

daily basis that “ I am not pulling my weight anymore”. The diabetic or Crohn’s disease patient feels like a party pooper for not being able to eat what others eat. Multiple Chemical Sensitivity patients feel like the Scarecrow and the Tin Woodsman all in one, because there are enough ignorant and well-meaning people (usually the same persons) telling them that they should pull themselves together and stop inconveniencing everybody with these silly complaints about headaches supposedly caused by aftershave, perfume, stuffy air, gasoline fumes, and even newsprint: “You have had a lot of stress lately,” MCS patients are told and advised to “go see a good shrink.”

A lion without courage is of course an oxymoron. Metaphorically, lions are synonymous with courage. Yet, when we become sick we are blinded by our fears to the same extent as this lion is unaware of his true nature. Not surprisingly, this “scardy cat” is the one who succumbs to the powers of the poppy field, just as Dorothy does. Fortunately, the Tin Woodsman and the Scarecrow are not so vulnerable. This poppy field is indeed the greatest danger in a patient’s experience, once the journey on the Yellow Brick road of medicine has commenced. Poppies, as the source of opium, forgetfulness, and unconsciousness provide a perfect metaphorical image for the worst thing patients can do: abdicate all conscious control to the system. Even the law requires informed consent and, thereby, not only demands from the physician that the patient be educated, but expects from the patient that consent is actively sought. “I thought my doctor knew what she was doing,” is the dreamy voice of those asleep in the poppy fields. Given the deaths now known to occur from standard medications properly prescribed and taken according to instructions, the poem “In Flander’s Fields”, takes on a new and terrifying significance.

The brainless Scarecrow proves helpful at this juncture because patients who think they are ignorant, ask questions often enough to save themselves from harm. Tin Woodsmen miss appointments for potentially dangerous tests or ignore instructions to take some harmful medication, because they had to take care of some other commitment which seemed more important. Sometimes, supposed character flaws can be very helpful agents for the instinct of self-preservation.

At last Dorothy reaches the Emerald City and puts on the green glasses handed to her at the entrance gates. Those are actually “locked on”! She may enter only as long as she agrees to take part in a grand collective deception in which everyone is consciously complicit (they all wear green glasses) and which has become totally part of everybody’s life. The Emerald City is a very comfortable and civilized place, no doubt. Dorothy and her companions are treated hospitably, and she is even given a beautiful silk dress – “green”, of course, which later turns out to be white when she finally takes off the green glasses. These glasses ensure everything and everybody will be seen as green and thereby show what it means to be stuck in a paradigm or group-think, and what the world looks like when certain assumptions rule and cannot be questioned. That the green of the city cannot be questioned is further emphasized by the fact that the glasses are locked on: presumably in the hope that even one’s dreams will be in green.

Emeralds are precious gems of great symbolic value in the western tradition. Baum spontaneously chose his symbols with the sure-footed instinct of the good story-teller. Throughout history, ever since the ancient Egyptians began to mine emeralds more than four thousand years ago, this gem is associated with immortality, rebirth, truth and justice. The high priest in the temple of Jerusalem wore an emerald on his breast-plate; the very foundations of the New Jerusalem were predicted to be of emerald in *Revelations*. The Christian papacy assigned the emerald as the stone of the Pope whose office represents Christ himself, and many hymns refer to the Kingdom of God as the Emerald City. According to Christian mythology, the Holy Grail was carved from a single large emerald, and when Satan fell from heaven, an emerald fell out of his crown symbolizing his total fall from grace. One of the most famous philosophical treatises in the history of alchemy, the *Tabula Smaragdina* (emerald tablet), discusses the mysteries of transformation of matter and spirit as a psychological process leading to enlightenment.

Frank Baum, as an educated person, would likely have known these associations universally held about this precious stone; they are part of Western culture. He

succeeded in imparting that sense of awe anyone would feel upon entering an Emerald City. Here we are in the New Jerusalem, the Kingdom of God, the very heart of everything that matters – and matters eternally. Consequently, it is deeply shocking that we learn about the need for those green glasses when entering the city. Dorothy and her companion are forced to take part in a comprehensive, collective self-deception. Life in the Emerald City proceeds in a civilized manner and Dorothy and her friends are treated most hospitably. For a century, artists have had the undoubtedly great pleasure of imagining this city and created some of the finest illustrations in children’s literature.

It would be crazy not to admit that the Emerald City - the city of Modern Medicine – is anything but a majestic triumph of human creativity, compassion, intelligence, and social change. But it would also be equally silly to fall prey to some fantasy about the good old days when medicine was supposed to have been more enlightened in all sorts of ways. Such nostalgic fantasies are equivalent to dreaming about the horse-and-buggy days and the romantic era of coal-oil lamps. No, none of us want to go back to wading through horse manure, watch horses being whipped, navigate the muddy streets of any downtown area a hundred years ago, nor do we want to light our houses with oil lamps and cook in wood stoves.

I speak from first-hand experience: growing up in India, an army of servants was needed to make life possible before the days of refrigerators, telephones, vacuum cleaners, washing machines, electric irons, and when very few people owned cars. For a child in India in the 1950’s living in this little domestic universe with its hierarchies, comforts, and securities was much like living in *Gone With The Wind*. Many years later, my husband and I built a cottage on Manitoulin Island with century-old carpentry tools without the use of a generator and spent many romantic summers there playing at being back in the 19th century: with oil lamps, pumped water, wood stove, no telephone, no television. We will never wreck the peace with a telephone or television, and we will pump water until our bones give out, but the whole place is now run by a state-of-the-art solar energy system to allow us to use our computers and to use instead of the neurotoxic oil lamps high-efficiency, low-watt bulbs. The good old days are great for a make-

believe *vacation* and when it comes to medicine, no you do *not* want to even visit the past as a patient. In fact, when it comes to medicine, I personally don't want to go anywhere that isn't connected to the internet.

For those who still harbor illusions about the Good Old Days, a cure highly recommended is reading a good history of medicine – even just a superficial one-volume production for the general public. By the time you reach the mid-19th century and the Americans have developed anesthesia, you will heave a sigh of relief and feel like one finally awakening from a nightmare. When by the late 1900's, biochemistry becomes part of medicine, thanks to the great medical genius Sir William Osler, and the 20th century has Alexander Fleming introduce penicillin, you begin to feel you are on the way home and Kansas isn't far off anymore. Indeed, as Osler used to say, “Without biochemistry medicine is pop-gun pharmacy”, and the concoctions of the previous centuries had mostly one property to recommend them: they hastened a less painful death. As for antibiotics, they may be seen as the equivalent in medicine to the Promethean gift of fire to humanity and carrying with it the same potential for good as well as abuse.

The history of medicine can be a visual experience in the very present. My parents' home in India was in a small town near the Chinese and Afghan borders, called Mussoorie; it is located at some seven thousand feet altitude in the foothills of the Himalayas in north-western India. The landscape is so spectacular, that the great Swiss psychologist C.G. Jung observed in his autobiography, “Once one has seen the Himalayas, the Swiss Alps are mere foothills.” Our house “Alyn Dale” had massive stone walls and a wide verandah running the length of the whole house; it was built in the early 19th century in the classic sprawling, high-ceilinged style of the British Raj era. It faced the great mountains beyond the deep, shady forested valleys from which curious leopards frequently emerged and in which hordes of Langoor and Rhesus monkeys made their home.

In Mussoorie are two terraced cemeteries which were constructed over a period of three centuries for the dead British empire builders. Above the winding mountain road lined by ancient pine trees, the Anglican dead were buried. Below the road the terraces contain the bones of the Roman Catholics. Magnificent tombs are among them with elaborate super structures such as Roman pillars, grieving stone angels, and Greek urns draped in stone-carved shawls. Huge slabs of granite, marble or limestone cover the oldest graves. The trees are so old, it takes several people linking arms to surround their trunks. Covering the entire mountainside, those many terraces pour down the mountainside like an amphitheatre in which I imagined crowds of ghosts, sitting in their 18th and 19th century finery, contemplating the majestic row of snow-covered Himalayan peaks changing from ice blue at dawn to fiery red at sunset.

Walking along those terraces and reading the inscriptions can easily take up a couple of days. The stories they tell are of men who buried half a dozen children and two or three wives with their still-born babies before they joined their family themselves, well before the age of sixty; young soldiers cut down by malaria or dysentery; imperial administrators who died of snake bites, cholera and typhoid. In those days, making it past fifty was noteworthy. As you climb further up to the uppermost terraces, there are no more children's graves, the women died in the 7th decade, as did the men, and the inscriptions change from expressions of overwhelming grief to simple legends such as, "here lies the beloved mother of ...". The trip from the wild orchid and moss covered graves of three centuries ago to the late 20th century burials at the top of the mountainside, takes one from a medical era helplessly battling an invisible world of bacteria, viruses, and parasites to a medicine that celebrates the achievement of old age - which is literally written in stone in this and thousands of cemeteries the world over.

James Le Fanu in his book *The Rise and Fall of Modern Medicine*, lists among the great recent achievements antibiotics, cortisone, the identification of carcinogens, the discovery of the cause of tuberculosis, the development of intensive care medicine, the ability to do complex interventions such as open-heart surgery, hip replacements and transplants, vaccines, and curing some forms of childhood leukemia.

I would add: the development of anti-malarial drugs (which saved my life many times), anti-fungal medications, the oral re-hydration solutions for babies, the discovery of the immune system and therapeutic methods to influence its functioning in chronic illnesses, and the many ways to control surgical, acute and chronic pain in addition to the opium-derived substances known since the days of the Neanderthals. The discovery of vitamins and their ability to cure scurvy and pellagra and prevent spina bifida and other birth defects ranks in importance equally with antibiotics and progress in surgery. At present, I would say, that the greatest contribution to medicine comes from toxicology, the applied form of which is environmental medicine.

I did not include genetic medicine, because it so far looks like one of those possibly unavoidable garden path trips from which one learns a lot, though, even as they lead to inevitable dead ends. Speaking of which - Le Fanu identifies the factors contributing to “the fall” of modern medicine as being that (1) pharmacology has reached the end of the line in drug development, (2) the widespread misuse of fancy technology, (3) the high monetary and personal cost of dying, (4) the abuse of epidemiological data, and (5) the overoptimistic hopes for gene therapy which are unlikely to pan out in any useful way. I will have a few more depressing items to add myself in the following chapters.

It is important to realize, that each era in medicine required its own specially colored glasses that doctors and patients wear - until the contradictory evidence became so overwhelming that the glasses must to be removed. Chapters 2 (on drugs) and chapter 4 (on doctors) will explore this in detail. For now, we must return to the story of *The Wizard of Oz* as Dorothy is about to meet the great Oz.

Dorothy and her friends “were dazzled by the brilliance of the city”, as well they should be. Getting to see the great Oz turns out to be another matter, as anybody will appreciate who has tried to get an appointment with the doctor these days. But Dorothy has those silver shoes (which, incidentally, won't appear green even with green glasses and introduce a foreign and unavoidable reality to the city's collective view) suggesting that

she is a VIP of some sort. The good witch's mark on Dorothy's brow is a symbol of protection known from *Genesis* where God placed it on the forehead of Cain. This little girl is marked as important by powerful forces of good. I see this as a metaphor for the fundamental importance of the patient in medicine. Nothing else matters.

Once Dorothy is ushered into the presence of Oz, she is faced with a huge emerald head seated upon a throne. Talking heads have a bad reputation today and suggest a lot of hot air with little relevance to reality. A thundering voice addresses the visitors: "I am Oz, the Great and Terrible! Who are you and why do you seek me?" Feisty Dorothy keeps her composure and answers, "I am Dorothy, the Small and Meek. I have come to you for help." That is the defining statement of all patients at all times.

This interchange provides for an excellent satire on many doctor-patient encounters of which I have had some myself. The less the doctor really knows what to do, the more thundering will be the arrogance and insistence upon his or her medical authority. "I am a professor of neurology," one such doctor declared to me after I had suggested that I might be suffering from Myasthenia gravis, "so *I* will make the diagnosis, and to do so, we need to do some tests first." At that point the doctor had already been informed that the most important of such tests had already proven this diagnosis to be correct: only people with MG respond positively to a medication called Mestinon, given in pill form; without taking it every few hours I was in those days virtually incapacitated, and my appointment with this latter-day Oz was kept only because Mestinon enabled me to make it to the clinic. *

* Mestinon is able for a few hours to correct the faulty communication between muscles and nerves, providing short-term relief from extreme muscle weakness: in myasthenics the eyelids won't keep open, the facial muscles are virtually paralyzed, and in more severe cases the muscles of the throat, chest and diaphragm become paralyzed in a fluctuating pattern difficult to track, so that one can't breathe or swallow. Intubation is then required. For some MG patients Mestinon does not work either, so standard medicine usually uses chemotherapeutic agents and immune-suppressors like predinose. In many cases the thymus gland is removed which in most instances is about as barbaric a procedure as the removal of one's ovaries because the thymus is of vital importance to the immune system. More on MG and other autoimmune disease in Chapter 3.

Similarly, Oz hides his ignorance and impotence by demanding that Dorothy must first kill the Wicked Witch of the West. The fact is, Oz does not know how he can help Dorothy and her friends, and the test ordered is a maneuver known as covering one's ass, and helps gain some time. What Oz and my neurologist should have done, is listen to the patient and take a good old-fashioned history, so as to arrive at a jointly constructed plan of action. Then nobody's ass is in danger of exposure, and both doctor and patient find the way home.

Dorothy is a compliant patient and proceeds with the ordered "test". Interestingly, now the green glasses come off: Dorothy and her friends are on their own with reality as it actually is. That reality includes the gauntlet of invasive tests and drugs which are aptly shown as murderous crows and wolf packs. The patient is poked, probed, required to submit to a biopsy, x-rays, and may be placed into all manner of wondrous machinery to elicit a long list of what must be *ruled out* – from cancer to tumors and everything listed in the textbooks that could possibly go wrong.

The instinctual forces represented in the Scarecrow and the Tin Woodsman thankfully come to Dorothy's aid, and the protective mark on her forehead as well as the silver shoes once again prove helpful. Many of us know when to say "No, thanks" or demand less invasive and alternative diagnostic procedures. The journey progresses into the witch's castle where the witch immediately realizes that she can double her powers if she can steal the silver shoes from Dorothy. After all, those shoes once belonged to an equally powerful dark force intent on personal gain and control over everything and everybody, namely the now dead Wicked Witch of the East. This second witch is also an excellent stand-in for the encounter with drugs, for that is what she brews in her kitchen. Being the Witch of the West, she is instantly recognizable as a force of death itself, for the geographic West, as the place where the sun sets, has always been symbolically associated with death, ever since the ancient Egyptians made the setting sun the entry into the land of the dead. Tomb-stones and burial sites of any kind in most religious traditions face East, thereby signifying the hope of resurrection and departure from the West.

The authoritarian relationship that instantly develops between the witch and the initially compliant Dorothy nicely describes the drug experience: here take this antidepressant, this cholesterol-lowering drug, this synthetic hormone, this chemotherapy, and don't ask questions. It doesn't matter one wit whether the synthetic hormones and antidepressant *increase* your chance of cancer more than smoking a pack of cigarettes, that cholesterol-lowering drugs are likely to *give* you a heart attack rather than prevent it; or that chemotherapy is barbaric and useless (in the sense of not curing), and the medical profession knows it; none of this concerns the witch as long as she has power - and control over the market and is the meanest and toughest of them all in this valley of death.

The Lion is locked up in a cage and starved because he refuses the witch's demand to be harnessed like a horse. The Lion is a force of nature like the self-healing tendency of the body, and it will not be domesticated and harnessed for purposes of a private agenda. In the Devil's Kitchen of Big Pharma's productions, the healing animal power of nature is sought to be imprisoned, and every attempt is made to make nature serve the bottom line and deny the truth that nature heals.

Dorothy succeeds in killing the witch by pouring the Water of Life over her. That is only possible, of course, if the patient is past being afraid of death. Coercion only works as long as the coerced will do anything to stay alive. Dorothy is merely a child, but the witch's attempt to steal her shoes (her standpoint, her attitude to life) pushes her past fear. That is the point when a patient asks himself, "What am I taking this crap for? I feel worse, I can hardly take care of my life, my life is hell." The medical literature and the pharmaceutical ads refer to this as "poor patient compliance". For example, it was known for years that more than half of all synthetic hormone prescriptions for estrogen replacement therapy are not filled when given a second time; no end of trees lost their lives to articles published on how to improve patient compliance.

Once the Wicked Witch of the West is dead, the patient is in control of the process. The patient now critically assesses test, drugs and therapies. For the patient, this may lead to

a reasonable and humane death, or to partial or complete recovery. Any of those three scenarios are acceptable and honorable, if they are consciously embarked upon and informed by the careful consideration of what constitutes acceptable quality of life, for that specific individual, in his or her personal circumstances.

For Hippocrates one of the defining characteristics of medicine was “the refusal to undertake to cure cases in which the disease has already won the mastery, knowing that everything is not possible to medicine.” (*Prognosis*, chapter 1). Nature is always in charge and the doctor whose respect for nature is the deepest knows what is possible and what is not. Here an important mythological vignette may prove helpful: This Hippocratic insight grew from the wisdom of Greek mythology: according to it, the god of medicine, Asklepios, on one occasion raised a dead person to life. This was judged to be a crime against the natural order, and Zeus, the king of the gods, decreed that Asklepios must die – even though he was a fellow deity. Zeus hurled his trademark thunderbolt at Asklepios, who was then wandering on earth among human beings. The thunderbolt hit the divine doctor in the hip but did not kill him. From then on, Asklepios had a limp and required a walking staff around which was curled the divine snake. Since Asklepios is the archetypal image that informs all medical activity, we will hear more of him in chapter 4.

Symbolically, Dorothy’s new state of mind is nicely shown by her donning the Golden Cap of power that once belonged to the witch. The Wicked Witch of the East, killed upon arrival in the Land of Oz, conferred the power of endurance through her silver shoes which were meant for walking in a difficult terrain. Now, the killing of the Wicked Witch of the West provides Dorothy with the crowning glory of a new knowledge of control: Dorothy finds the Golden Cap fits her exactly, and now she is in charge of the situation.

For me the Winged Monkeys are medical researchers – and there are hundreds of thousands of them ranging from lab technicians to basic science researchers. Some of humanity’s finest brains are working for Big Pharma, but they seem to jump in monkey-

see-monkey-do fashion to the bidding of an industry hell-bent on making a killing from disease *management*. Being a chimera that combines the qualities of the clever monkey with the soaring spiritual power of the Holy Ghost, they may equally well serve life through work on disease *prevention* and *cure*. All that immense biochemical knowledge enslaved by drug research for *profit* is ready to be used for the benefit of humanity as a *common good* – if we wish it to be so.

The climax of the story takes place when Dorothy and her friends return to Oz. The newly invigorated animal power of the Lion causes him to roar and results in the dog Toto jumping and knocking over the screen. Behind it hides the little fellow pretending to be Oz the Great and Terrible who is now forced to admit “I am just a humbug” and freely adds that he is “very ashamed” of himself.

Now, I am not about to suggest that doctors are humbugs. I have met many doctors worthy of the epithet “great”, but none of those were “terrible”. I have also met many terrible ones, and none of those were great. This scene develops into Oz telling his visitors how he became entangled in a web of pretenses and wound up being a cog in the wheels of an enormous system of no direct relevance, little substance, but very difficult to be extricated from. Oz explains to Dorothy and her friends how he, too, accidentally landed in this strange land (the patient’s cyclone has its parallel in the doctor’s cyclone), having got lost in a balloon trip coming from Omaha – not so far from Dorothy’s home, of all places! Dorothy is so appalled by the story Oz tells her, she observes sternly, “I think you are a very bad man.”

And here we have a redeeming moment for Oz! He gives a brilliant reply: “Oh, no, my dear, I am really a very good man, but I am a terrible wizard, I must admit.” That sentence should be added to the Hippocratic Oath for modern doctors to help ensure that they remain humble, for they need to remember that while they are all good people, they are definitely all lousy wizards.

The story ends with two scenes which parallel each other: the first involves the cure of the Lion, the Scarecrow and the Tin Woodsman; the second is a variation of the same scene repeated for Dorothy who finally returns home to Kansas. Oz engages in a wonderful placebo therapy and in doing so approaches the magical. He carefully fills the Scarecrow's head with bran and provides it thereby with shape and substance ("bran-new brains") before refitting it on the body. The Scarecrow instantly feels "very wise". For the Tin Woodsman he had earlier fashioned a red silk heart stuffed with straw which Oz surgically inserts into the tin chest, assuring him that it is a kind heart. As the Tin Woodsman sees the beautiful red heart being placed inside him, he can no longer doubt that he does have a heart now. The Lion is made to stick out his tongue and undergoes something like a medical examination. Then he is offered a green liquid to drink. Upon cautious inquiry as to the nature of this substance Oz tells the Lion, "If it were inside you, it would be courage. But courage is always inside you, so that this really cannot be called courage until it is inside you." The Lion is impressed with this logic, drinks the liquid and right away feels totally courageous.

In medicine a placebo is known as an inert sugar pill which has no chemical activity. It comes from the Latin *placere* (to please) and describes a patient's spontaneous healing response. In drug trials the control group often is given an inert substance in order to measure (and exclude from the final calculations) the percentage of spontaneous responses that one must assume occur even with the chemically active drug being tested. There is a vast literature on placebos, and the most recent ethics guidelines from the World Medical Association, address some of the most serious potential violations of human rights the uses of placebos may involve.

Another aspect of the placebo effect is equally interesting and was the subject of an interdisciplinary conference at Harvard Medical School in 1994; it started a whole new line of research into the positive effects of the placebo effect, and a new understanding of its function is emerging.

The placebo effect can be observed to have a lasting healing effect when a person fundamentally changes their attitude to the illness and life itself, because biologically, the placebo effect has released self-healing powers in the patient. Far from being some mechanism that dupes people, the placebo effect appears to be a powerful response initiated by the mind. The whole of mind-body medical research deals with this phenomenon. An example is the famous story of Norman Cousins.

One of the most potent agents of the placebo effect can be the person of the doctor. Some doctors can make you feel better without doing anything at all – the reverse is true too. Usually, people’s blood pressure rises when they meet a doctor because they are afraid. Some doctors can cause chronically high blood pressure to normalize in minutes, simply by talking to the patient - as I witnessed many times during my father’s long illness in the 1960’s; his doctor was an extraordinarily humane person whose presence made everybody feel better. Some objective investigations have recently been done of this phenomenon. At a medical conference held at the University of Toronto in May of 2000, Dr. Stephen Sagar of McMaster Medical School in Hamilton, Ontario, reported how “entrainment” of the patient’s electromagnetic field by that of the doctor can enable healing to take place. Experiments have shown, that radio-frequency electromagnetic fields can indeed induce change on the physiological and even cellular levels. Citing research from the international medical literature, he explained how tests were conducted with SQUID (Super-cooled Quantum Interface Device) and magnetometer devices. These showed that people with reported healing powers emit energy up to a thousand times stronger than found at baseline with ordinary people; these energy emissions resonate at frequencies similar to those used in live-tissue healing experiments.

Researchers at the HeartMath Institute in the US had proven healers focus with compassionate intent on the heart of a patient suffering from irregular heart beat; this caused those hearts to function normally again. The explanation was that the measurable electromagnetic field of such a healer was shown to be strong enough to influence the subject patient’s heart. Indeed, such compassionate intent was shown to be able to influence the cardiac coherence as well as the EEG of the patient. Physicists at

Stanford University have done similar research involving measurable changes at the cellular level. And at Harvard University a large double-blind randomized controlled study, published in the prestigious *Archives of Internal Medicine* in 1999, showed that prayer can also reduce adverse outcomes in the patients of a coronary care unit.

The Harvard researchers mentioned earlier, who since 1994 have studied the placebo effect, made the important observation (Harrington 1999) that “the placebo [effect] is powerless without the physician. Modern therapy has made many physicians believe that they are only conduits of power, pills, and procedures, and that loyalty and fidelity are outmoded concepts from an era when physicians could only sit helpless at the bedside.”

This research shows that what happens between a doctor and a patient takes place on many levels of reality. No wonder, the ancient world saw medicine as a divine calling rather than a trade to be learned. Once the imposter Oz focused with true humane intent on the needs of the Scarecrow, the Lion and the Tin Woodsman and transmitted symbolic messages of personal significance, Oz paradoxically ceases to be a humbug. With these carefully chosen symbolic acts he brings to life what was there to begin with – the potential for healing. These three characters required an affirmation to bring about understanding themselves correctly.

Dorothy’s planned escape with Oz in the balloon is bungled and Oz takes off on his own. After some further minor adventures she finally finds the last remaining – good – witch Glinda. Dorothy learns, just as her friends had done earlier, that all along she had the power to return home – in her case by clapping the heels of her silver shoes together three times. This is, of course, a shocking revelation for Dorothy who blames herself for all that happened. But the Scarecrow, Lion and Tin Woodsman tell Dorothy that they would never have come to understand their true natures if she had not come to the Land of Oz. Besides, Dorothy left the Land of Oz in a better state than it was before her arrival: the two bad witches are dead, the green glasses are no longer required, the humbug wizard is gone. Dorothy used the power of the first bad witch for good by embarking upon the journey along the Yellow Brick Road and making the adventure a success for all. The

human spirit can successfully deal with a cyclone and informed patients will change the course of medicine.

Our Golden Age of Medicine

In order to understand how the immense achievements of medical science can exist simultaneously with such abysmal failure to control old and well-understood diseases and prevent new ones from evolving, I would like to turn to the concept of the Golden Age. The inherent paradox that characterizes a Golden Age will serve my purpose well.

A Golden Age is an era of perfection and purity which allegedly existed in the past, or which is yet to come in the future, such as the Kingdom of God in Christian myth. Not only mythology, but also historians identify various Golden Ages and for them it is, of course, later - when with historical hindsight they point to a clustering of pivotal events and groups of outstanding personalities and say, "Ah! This was truly the Golden Age of - astronomy, art, political reform" etc. However, my position is that a Golden Age is one in which spiritual corruption and the abuse of human rights has become so generalized as to have become the order of the day. In this extreme darkness a *corrective compensation* inevitably takes place and produces great discoveries and moral reform - the gold. These achievements remain valid and are eternal truths. However, this gold is only found and these truths are only recognized to be such because the people at the time were sufficiently abused and disillusioned to be able to hear them and recognize their value. Times have to be truly terrible in a Golden Age.

We live in such a time. Living in Golden Age is equivalent to the famous Chinese curse, "May you live in interesting times." Given that chronic disease is rampant in the industrialized countries, that the diseases we once were able to cure are returning in epidemic proportions with mutated bacteria resistant to all known drugs, that every second person is now expected to die of cancer, that an estimated thousand people per day die in North America from medical mistakes and drug side effects, and that the sperm count is continuing to drop so computer models show that the human race might be

extinct within 500 years - given all that and much more bad news, it will take some indulgence on the reader's part to consider my proposal that we live in a Golden Age of medicine. Even if I do not convince, I hope to be at least entertaining - while we prospect for gold.

The Golden Age projected into the past and nostalgically remembered is, in fact, no different from the hope for the Kingdom of God yet to come. Understanding a Golden Age is important because it anchors the mind in the present - the *only* time that matters, where all moral decisions take place, and every action gives rise to a reaction and has often horrendous and usually unpredictable consequences for the future. The past and the future don't actually exist - only the present does - especially in medicine, where the current moment is of central importance for patient and doctor.

There is a remarkable agreement between the various ancient cultures, east and West, with regard to the mythology of time. The *Golden Age* is described as a time of universal happiness, fertility, innocence and joy and the absence of evil and sin. In Greece this era is supposed to have been presided over first by Uranus and then by Saturn (or Kronos). Mysteriously, this state of perfection never lasts and no cultural tradition appears to have an explanation for this. At any rate, perfection has a flaw and the Golden Age gives way to the *Silver Age* in which human beings turn out like Adam and Eve and their family did after the fall: a deeply troubled relationship to God or the gods characterized by mistrust and fear, an equally troubled relationship to each other causing people to kill each other, and sickness becomes part of the human condition. Now that discord and trouble are universal, things get worse and the *Age of Bronze* appears. Here people are powerful and cruel, tools are invented and used for war, and the world has become like the Greek world of the dead, Hades - a hell of ignorance. Naturally, matters will now get even worse and we have the *Iron Age* where human degradation reaches such proportions, that the Greek king of the gods, Zeus, resorts to a Final Solution - as does Yahweh in the Old Testament when he couldn't stand his creations anymore. The gods of ancient Mesopotamia, according to the mythologies of a couple millennia earlier, found the noise human beings made on earth unbearable to their heavenly peace: they all sent a big flood and killed the

whole of creation - with a few exceptions, such as Noah's family in the Old Testament, and a few similarly chosen individuals in the other traditions. Without them, the whole cycle would not be started up again and we wouldn't be here to tell the tale.

Since Hippocrates is the source of the western medical tradition here under discussion, we need to look at the Greek Golden Age in more detail. Its first ruler of this era was Uranos, which means *sky*. He and his wife Gaia, the *earth*, produced an unruly family known as the Titans, whom father Uranos had a hard time handling so he imprisoned them. One of them, Kronos, (which means *time* and words like chronic derive from it) got out and in the rough-and-ready manner characteristic of mythological characters, cut off his father's testicles and became the next ruler of the Golden Age. A prophesy had warned him that he, too, would lose his crown jewels at the hands of one of his own children, so he took pro-active measures by eating all his children, as they were being born to his wife Rhea. This became so trying to Rhea, she fed him a rock wrapped in animal skin when her last son, Zeus, was born. Zeus grew up and challenged his father's autocratic rule which resulted in Kronos losing his testicles also. With Zeus' reign, the classical Greek pantheon of gods appeared and the world of humans began as well. Gods need people to worship them.

It is most curious that the Greek Golden Age is depicted as such an era of cannibalism, patricide and relentless quest for power. At the same time, the tradition insist this was a time of universal happiness and fertility - a paradox if ever there was one. Furthermore, grandpa, father and son - gods of cosmic forces though they are - cannot maintain this golden status quo; Zeus totally loses it by drowning the world in a flood. The message seems to be that treason is part of order, that perfection wobbles - it won't stay put. The very nature of perfection includes a dynamic force that makes change inevitable. Or, to use the language of modern physics: there is always something in the initial conditions of any system that can't be nailed down; it agitates and causes a chain reaction of change such that all the pieces of the system interact with all the other pieces of the system in unpredictable ways, until everything has completely been transformed. India's mythology recognizes this fact and sees this whole drama of the ages as an eternal cycle

that repeats itself forever - always a little different than the last time the ages cycled from heaven to hell. Every age carries within itself the seed of its own destruction, and each destruction is ultimately another creation.

Although it is a matter of universal experience that life is one damned thing after another, human nature longs for permanent peace and order. Some indulge in the illusion of re-writing history and pointing to the past as the source of salvation: that's when men were men and women knew their place, and children were properly brought up and a handshake sealed a deal and could be trusted... and all the rest of what is really that horrendous nonsense.

Others point to the future, and if they are powerful enough, like Stalin, Mao Tse Tung and Hitler, they can take entire countries with them on their quest for heaven and plunge everybody headlong into hell with them. President Bush today is energetically trying to persuade Americans and Europeans that he can deliver a future Golden Age. The Kingdom-of-God variants always require a sacrifice of something today in order to achieve something great and wonderful tomorrow. Stalin had his five year plans, Mao had those as well as periodic internal revolutions designed to re-orient the people to the future goal, and President Bush insists all civil liberties must be temporarily sacrificed until he has won the war on terrorism and an age of world peace has begun. In a recent speech, Bush summarized the dark side of all Golden Ages perfectly when he said, "When we talk about peace we really talk about war."

The analytical psychologist, C.G. Jung wrote an essay in 1961 about the relationship of mythological themes to politics entitled "The Function of Religious Symbols"; it was posthumously published. Jung saw the Cold War of his time as the product of an unexamined conscience on both sides of the divide, with each pointing to the other as the "evil empire", as President Reagan later put it. Jung observed that exploring one's own conscience "is not a popular pastime, although it would be most necessary, particularly in our time when man is threatened with self-created and deadly dangers that are growing beyond human control". [*True to this day, except that we have added to the threat of*

nuclear destruction which Jung referred to, a Devil's Kitchen of pharmaceutical drugs, pesticides, solvents, asbestos and some several 100,000 more toxic chemicals.] Instead, of that self-examination, the usual projections fly back and forth, and collectively the world falls under the spell of the “time-hallowed archetypal dream of a Golden Age or paradise on earth, where everything is provided for everybody, and one great, just, and wise Chief rules over a human kindergarten. “Jung goes on: “This powerful archetype in its infantile form ... won't disappear from the world at the mere sight of our superior point of view [because] we even support it with our own childishness, for our Western civilization is in the grip of the same mythology. We cherish the same prejudices, hopes and expectations. We believe in the welfare State, in universal peace, in more or less equality for man, in his eternal human rights, in justice and truth, and [not too loudly] in the Kingdom of God on earth. The sad truth is that man's real life consists of inexorable opposites – day and night, wellbeing and suffering, birth and death, good and evil. We are not even sure that one will prevail against the other, that good will overcome evil, or joy defeat pain. Life and the world are a battleground, have always been and always will be, and, if it were not so, existence would come to an end.” (Collected Works vol. 18:245f)

Yet, Jung's observations notwithstanding, most social change is driven by dreams of perfection and justice. When Germany's Iron Chancellor, Count Bismarck, introduced the concept of state financed universal medical care in late 19th century imperial Germany, the Kaiser and the aristocracy were certain that the Count had lost his mind. Bismarck was determined to ease the suffering of the masses and prevailed. All subsequent Medicare schemes are modeled after his, including the Canadian one. Every time any government moved to introduce such measures for universal health care, all hell broke loose because nothing polarizes people as much as the issue of universal human values. After all, some believe those values are in the past and need to be brought back, others see them in the future and want to create them. Bismarck, later President Truman, in Canada Tommy Douglas and many others had a vision of a *future* Golden Age where access to the alleviation of suffering would be open to all, not only those who could afford help.

For historians the concept of a Golden Age has proven very useful and they employ this mythological concept deliberately as a metaphor to interpret and research such real phenomena as the 5th century BCE – a century that saw living at the same time Buddha, Socrates, Plato, Aristotle, Chuang-Tzu and Lao Tzu; in ancient Greece Pericles implemented the principles of democratic rule, and Hippocrates developed the foundation of modern medicine. Similarly, historians describe the Renaissance as a Golden Age when science blossomed: we think of the birth of astronomy and cosmology with Copernicus, Galileo, Kepler, Newton, of artists like Leonardo Da Vinci, Michelangelo, Albrecht Durer, the religious reformers like Martin Luther, the invention of the printing press and the start of universal literacy. More recently, the period in the 18th century known as the Enlightenment, brought us great political philosophers John Adams and Thomas Jefferson principal among them, moral philosophers like Emanuel Kant, and the great reformers who abolished slavery. The extraordinary clustering of great physicists in the 20th century is another example of a historical Golden Age; they not only discovered nuclear fission and created the atom bomb, they also allowed the computer to become reality. The Golden Age phenomenon of the clustering of bright human intelligence happens right before our eyes even today: the 20th century produced Mahatma Gandhi, Nelson Mandela, Vaclav Havel and Gorbachov; the same is currently observable for the feminist and the environmental movements.

All share an opposition to an existing state of affairs that had become so intolerable as to produce rebels. They all do as Uranos and Zeus did – emasculate some tyrant or overthrow some tyrannical system. Golden Ages cannot last because they are in essence tyrannical. Hitler's Germany was at first by all accounts (my parents included among them) a miracle of order, efficiency, and top-down beneficence affecting all aspects of society. The cities were beautiful, factories were clean, medical care was universally available, and the Volkswagen beetle was invented so every family could have a car. The trouble was, that in the arbitrary god-like view of the ruler, there were some elements deemed less beautiful and those were hidden in concentration camps. Dissenters were deemed especially ugly. And like Uranos and Kronos, whatever rulers addicted to

perfection and beauty do not like, winds up imprisoned or devoured and hidden from view to maintain the illusion of control – from Auschwitz to Guantanamo Bay. The fifth century BCE Greek dramatist Sophocles already identified tyranny as the action of those who believe they are god-like, thereby bringing on their own downfall.

Indeed, it is unlikely Plato would ever have written a word if the mind-police of ancient Athens had not murdered his teacher Socrates; the experience proved to be so traumatic, Plato dreamed up the ultimate utopia in his *Republic* - the ideal state in which justice would be guaranteed because rulers would only be rulers if they did not want to be rulers. Socrates, in turn, would never have provoked the anger of his fellow citizens if he had not been troubled by their self-destructive hypocrisy and bigotry. Even great artists tend to be born from the frustration with the norms of their times. Jefferson would have remained a happy country gentleman pursuing his 18th century obsessions of architecture, plant breeding, and philosophical studies in his fine library, and never would have had to write the Declaration of Independence, had the times not made him mad enough to do so.

Scientists like Galileo, came up against cosmological views that did not match their observations and mathematical calculations which demanded adjustments of an entire worldview to the observed facts. Pope Urban VIII was a mathematician himself and a highly educated and civilized person who, correctly, pointed out to his life-long friend Galileo, that placing the sun at the centre would make the earth a mere star among millions of others. That, the Pope said, would pose difficult questions, such as “are there intelligent beings on other planets? And if so, how are we to understand the meaning of original sin, the incarnation [of Jesus as the Son of God], and the whole of redemption?” Church teaching insists on the absolute and unquestionable fact that the God of the universe became incarnate in the person of Jesus. If the earth was just another star, the Pope informed his friend Galileo, then the whole of the Bible was a side show relevant only to one little planet - unless one assumed that Jesus repeated his act of redemption on an interplanetary scale, which the Bible does not suggest happened, the Resurrection notwithstanding. Galileo responded that “Scripture does not teach how the heavens go, but how to get to heaven”. (Shea & Artigas 2003: 129f) That was a nice try, but

theologians since St. Paul had explained the relation between God and humanity and God and Nature to everybody's satisfaction, with perfect internally consistent logic, once and for all. The Pope's job was to keep the theological peace and thereby the social hierarchies in tact.

It would take a lot more than a Galileo's mathematics and observations to overthrow the church's Golden Age. The Church's failure to adjust to observed reality in science and evolving social needs effectively removed it from centre-stage – and science is now the new religion, replete with its own codifications and experts eventually to be overthrown also. Indeed, as recently as 1981, Cambridge cosmologist Stephen Hawking was told by the Pope “that is was all right to study the evolution of the universe after the big bang, but we should not inquire into the big bang itself because that was the moment of creation, and therefore the work of god.” Hawking was granted this audience with the Pope right after he had presented a paper at a cosmology conference in Rome; the topic of his paper had been on the possibility that space-time may have no beginning and no end and that, therefore, there could be no moment of creation. The irony of the situation was not lost on Hawking who notes that he was born exactly 300 years to the day after Galileo's death (Hawking, 1990;116).

A Golden Age is a gilded cage whose owner struggles to maintain its perfection. Since perfection is an illusion as is control, the dynamic force of reality produces change when the current order has become unsustainable. Historically, we then observe that characteristic clustering of *irreversible* events which initiate a new era. Using a biological concept, one might say that a Golden Age is like a speciation event observed in the fossil record: the old order worked well for a while, but disappeared as circumstances changed; those creatures capable of adapting did so, and those who couldn't died and are known to us only as fossils. A Golden Age, like Evolution, supports many life forms but is never eternally in love with any one of them. Evolution in biology as well as in history always travels one way with the arrow of time: we do not return to a former stage of evolution, just as we never return to the kindergarten of Uranos or Kronos. A Golden Age, ultimately, is always an illusion – but a creative one.

To illustrate the drama of a Golden Age's evolution in medicine, I will give just one example. This discussion will go into greater depths in chapters 3 and 4.

Dr. Ignac Semmelweis was a gynecologist working in Vienna in the 1840's before the "theory" of bacteriology was accepted; Louis Pasteur was his contemporary and at the time highly controversial, but both doctors were destined to emasculate the big daddies of their time, just as Zeus had done with Kronos. Pasteur was fortunate in being celebrated for his discoveries as an old man. Semmelweis died in an insane asylum after being beaten to death by the attendants. Dr. Semmelweis wondered why the women giving birth in the Vienna General Hospital (a fairly new development at the time) died in such great numbers from childbed fever not even comparable to those who gave birth literally in alleyways of the city slums. He also observed that there was a similar discrepancy between the two wards: poor women attended by midwives in one ward had a better survival rate than the rich women attended by doctors in the other ward; the physician-attended death rate was ten fold higher. He noticed that injury to the cervix or uterus during complicated births almost certainly brought on this lethal disease, and finally he observed that whenever the physicians' ward was closed and cleaned, the rate of death in the new admissions was low and increased only after some time. This set of observations strikes us today as a simple and elegant example of epidemiological reasoning. In the 1840's this was the work of a master detective whose trains of thought the ordinary mind would not, at first, understand at all. Dr. Semmelweis did not know that at this time on the other side of the Atlantic Ocean Dr. Oliver Wendell Holmes, a fellow Golden Ager, was making identical observations.

Dr. Semmelweis suddenly understood the disease when a fellow physician, Dr. Koletschka, died of it. Not only was the doctor a male, but he became sick after accidentally cutting his finger while conducting an autopsy on a patient who had died of puerperal fever - not while delivering a baby. Dr. Semmelweis later wrote, "If septic changes arose from the inoculation of cadaver particles, then puerperal fever must originate from the same source. The fact of the matter was that the transmitting source of the cadaver particles was to be found in the hands of the students and attending

physicians” - who did not even dream of washing their hands when coming from the morgue to the delivery room. The importance of this deduction is better understood when comparing it to the insight Newton had when he saw the famous apple fall from a tree. What Newton understood was *not* merely that a force, now called gravity, could be inferred from this apple – everybody knew that – but that the apple’s attraction to the ground suggested how the whole solar system moved and how the planets maintained their various orbits in relation to one another.

Dr. Semmelweis had understood the underlying universal dynamic of infectious disease and, thereby, he initiated a new way of doing medicine: doctors needed to wash their hands because the doctor is placed into an invisible dynamic unity with the patient – like the apple and the gravitational force of the earth, and the earth in the solar system’s gravitational field. The discovery of bacteria, toxic agents in pus and putrid material from cadavers placed doctor and patient into a common arena and made them comrades in arms.

In 1848 Dr. Semmelweis had risen sufficiently in the medical hierarchy to be able to conduct an experiment: he made everybody in his part of the ward wash their hands. Within one month the death rate went down from 18.3% to 1.3%. Medical historian Nulan observes: “No longer could the deliberately myopic obstetricians remain inattentive to the difference in mortality rates between the two divisions ... an explanation had been found, but it brought with it an excruciating accusation and a demand that the old methods give way to new. For many a conscience-stricken obstetrician, already tormented by years of helplessness in the face of puerperal mortality, it would be an appeal to self condemnation that was too heartbreaking to bear.”

In the Spring of 2000, when attending a medical conference in Toronto I had lunch with a group of doctors and dentists. We had all just attended a presentation on the connection between dental silver (mercury) amalgam fillings and their primary role in triggering chronic neurological diseases, Alzheimer’s and more. A dentist sitting opposite me volunteered in a flat, calm voice while staring at his plate, “I spent some thirty years of

my life placing those fillings into the mouths of thousands of patients. Today I know that I caused countless deaths and incalculable misery.” Nobody knew what to say. It was true. Finally, I asked, “What do you do now?” He replied, “I am no longer a dentist. I developed neurological disorders myself from all the mercury I handled. I now run an institute that teaches dentists how to fix teeth properly and without mercury.”

Dr. Semmelweis, in the words of Nulan, became “a hellfire-spewing evangelist” telling his fellow physicians they were murderers. He lost his job, and as soon as he did, the mortality rate went back to “normal” at the hospital. He had difficulty in publishing his observations in the medical journals, and finally descended into a deep depression which, today, we would identify as the result of posttraumatic stress. He was admitted to an insane asylum. Nulan took the trouble to study the records on Dr. Semmelweis’ two-week stay there and also had access to the x-rays taken of his remains made a century later by the Austrian government; it was clear from the combined evidence that Dr. Semmelweis had died from blows to the head, which was quite standard then in restraining agitated patients.

It took another couple of decades before obstetricians washed their hands routinely. Puerperal fever virtually disappeared. Dr. Semmelweis won the war but died on the battlefield. Often the pessimistic observation of the originator of quantum physics, Max Planck, holds true. He wrote in his autobiography with respect to the difficulties he and Einstein’s experienced in having their ideas accepted, that new ideas are often only accepted when the old geezers who espoused the old notions finally retire; this neatly sums up the hazards of taking on the paradox of a Golden Age.

In the following chapters we will explore the battles of many doctors and patients who, like Dr. Semmelweis, could not help but be true to the spirit of Hippocrates. Those universal truths give medicine its very life, wherever it is practiced. The *lasting* achievements of the struggle in a Golden Age bring the peace that comes from war, but unlike the George Bushes of the world, they do not expect sacrifices of current rights and freedoms for uncertain pies of unknown flavors later; universal truths point to the Here

and Now; Socrates, Galileo, Jefferson, and many other dissenting voices from Golden Ages are wake-up callers, not demagogues. A Golden Age is an era of wake-up calls of such force and clarity, that humanity cannot remain asleep.

Currently, medicine is at the end of such a Golden Age; the true and lasting discoveries of the last 150 years are not enough anymore. Hippocrates observed about medicine, “Science and opinion are two different things; science is the father of knowledge, but opinion breeds ignorance.” (*The Canon*) Indeed, the conflict between opinion and science is the central conflict of every Golden Age and the source of its arising and its fall. Hippocrates has joined us in our journey through the Land of Oz, the land of Modern Medicine, where the roads are golden in more ways than one. His wake-up call is changing everything.

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