THE ART OF VETERINARY SCIENCE

Integrating philosophy, ethics and professionalism into a clinical life
‘Just as Art consists not simply of works of art but of an attitude, the artistic spirit, so does Science consist not in the accumulation of knowledge but in the creation of fresh modes of perception. The ability to perceive or think differently is more important than the knowledge gained.’

David Bohm, astrophysicist
Dedication

I did toy with the idea of doing a picture book on cuddly animals. Pictures would, I had hoped, describe more succinctly this numinous word ‘art’ which sometimes surrounds veterinary science. I have always believed that there are veterinary students (both undergraduate and graduate) who, like myself, hate studying and because of this I aspired to take photographs which might say in a snapshot what would take a thousand words to detail. But I am a poor photographer. In deference to the masters of the Kodak, I offer yet another book of words to paint a gouache of the art of veterinary science. I also wish to thank encarta.com for reference material on philosophical matters and to my many teachers (at university and in the consult room) who suffered for my understanding of this art.
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The Ten Commandments
of Veterinary Science

1. *Honour Science*. All scientific knowledge has been derived from experiments. Avoid ‘snake oil’ remedies with unsubstantiated claims.

2. *Respect scientific inquiry*. If textbooks are unable to explain something, it merely shows the limitations of our knowledge, not of scientific truths per se. Some scientific facts are contradictory, due to insufficient knowledge. Rarely is science black and white. Respect the dilemma.


4. *Respect the teachers*. Universities are where vets are born. Research institutions are where new knowledge emerges. Those who aren’t pupils of life are taught life’s hardest lessons. Learn by teaching what you know, even if its only to clients. Teaching is the only way to learn.

5. *Respect animal life*. All animals have an ethical right to a pain-free and stress-free life. Avoid redundant experiments on animals. Unless you’re a pathologist, euthanasia should be a last choice not first option.

6. *Don’t adulterate your skills*. Judging clients, animals and diseases only devalues your performance. Metering out your compassion to ‘only the worthy’ is unsound. To a client, there is no such thing as a trivial problem only a trivial solution. If you go the extra mile, clients will often pay for the petrol.

7. *Do not steal from the public*. Over-servicing of clients earns us a bad reputation. An ethic that says ‘to charge twice the price and see half the clients’ only solves half the problem. Neighbouring practise burden the fall-out, clients shop around, our skills become commodities and our reputation as a profession founders. Knowledge is value-laden. Thus, our respect from the public is priceless.

8. *Don’t slander another vet*. A vet’s skills should never be denigrated unless they are present in the conversation to defend themselves. Knocking someone else down only drags us all down. What goes around comes around.

9. *Don’t covet another’s talent*. Don’t compare yourself to other vets. They are just mirrors of your own ambitions. Your ‘Don’t knows’ and ‘Can’t dos’ should be seen as signposts to learning, not tombstones. Know your limitations but strive to venture outside this circle.

10. *Don’t covet a neighbouring practise*. Aggressive marketing results in ‘practise wars.’ It also devalues our clients as revenue units and cheapens our professional image. Rather than just expanding your turn-over, try redirecting it. Find the riches in the niches.
'We are each given gifts, yet we amuse ourselves with the box it came in.'

What use is knowledge if we are unable to obtain it or use it? Having the tools to procure knowledge and apply it in novel circumstances is what uniquely defines not only our profession but also humanity. It is crucial to understand not only how we obtain knowledge but what we do with it. We can’t assume that the process of getting knowledge is constant. Humans are a heterogenous mix of races, cultures and ideologies. The method of acquiring knowledge is as diverse as the people who study it. Thus intellectual knowledge and processes are equally important. There is as much an art to it as there is science. There are times in our professional life when we forget what we are doing with our lives, or where we are going, and why we are a veterinarian in the first place. At such times, we should pause to reflect on our goals, our achievements and what we have learned. It is the tools we acquire from our profession, not the knowledge itself, that helps garnish our personal life and thus help further enrich our professional life.

Maintaining competency is essential to veterinary practice. To achieve this end, there are three basic areas to address. Firstly, to maintain our knowledge base and assimilate it into our professional life, secondly to maintain a standard of professional skills and thirdly to adopt a routine of learning which complements our professional lifestyle. These three broad categories of endeavour are critical for self-actualisation. Not all of us want to be specialists or professors. Indeed the vast majority of veterinarians have a lifestyle where their professional life is just a small part of their overall life journey. It is finding a balance between being a good veterinarian and a good (or satisfied) person that is the greatest challenge of all. To be obsessed with a career at the expense of our personal life is as dangerous as being negligent of our professional responsibilities. There is no hard and fast rule in finding a balance between a professional and a personal life as every person’s journey through life is different. Being competent and content with our family’s needs is as important as knowing the latest regimen for treating Cushing’s Syndrome. How to find the balance between professional and personal endeavours has never been easy but many successful professionals have been able to find such a balance. The way they do this has provided much insight into the creation of this book. Successful vets transform what they know and what they can do into an art form. Magic appears to happen. Magic that is nothing more than creative use of knowledge and technical skills.

But a part of this magic is also the skill of integrating the inner life with the outer one. Of finding emotional integrity amidst what is sometimes a maelstrom of urges, feelings, wants and needs. It is a difficult task - a sort of emotional gymnasium - where we are called upon to address the timeless question – ‘Am I prepared to give up what I am to become who I want to be?’ Achieving personal growth (self-actualisation) is a tall order when we are committed to so many things. Besides, we might feel that there is little in ourselves that needs major overhaul. At such times, it is easy to accept our journey on face value. Life however, is never a static thing. Being open-minded, compassionate and creative is what steered us to a veterinary profession in the first place. This keenness to grow as a young student and graduate is often lost in the grind of professional life. The nineteenth century philosophy that ‘anything by nature which is not growing is in the process of dying’ affirms the preciousness of life, yet it does not consider modern notions of ‘potentiality.’ Recent studies in cellular cloning show that within all living organisms, life is infinitely renewable by extracting the seed essence of that life as DNA. Thus we are all dying but retain within us the potential for infinite regrowth, reversion, assimilation into novel forms, mutation, hybridisation and nonlinear change.

As veterinarians, we embrace a motto akin to the Hippocratic oath of ‘doing no harm,’ not knowing that in the times of Hippocrates, if medicos failed to cure a patient, they were put to death. We congratulate ourselves that we are no longer so savage, yet modern death can be similarly equated with expensive litigation, and is the death any less painful or savage? Why are Volvo drivers so irritating to all other road users? Is it a feeling of impregnability, indestructibility, a ‘better than thou’ mentality? Does indemnity insurance make us feel more secure in practise, and do we sometimes practise veterinary science like Volvo drivers, disregarding the consequences of our actions on those around us? We have at best forty or fifty years of professional life before retirement - some of us much less than
this. Are we sure that when the time comes to hang up our surgical gown and close our clinic door for the last time that we have been all that we can be without regret? Even if we only work as a veterinarian for five years after graduating and then pursue another career, the experiences we accumulate are invaluable throughout the remainder of life. With ever increasing skills, we begin to develop wisdom that transcends textbook knowledge - such as being able to diagnose a condition within moments of clinical examination, when years before we would have struggled for days trying to determine a diagnosis. Such wisdom is paramount, but we also must possess alongside this a stability of mind. Knowing what to do is one thing. How to adequately communicate this wisdom to an irritable client who expects the best medical treatment at a basement price is another. Avoiding over-medicating, overselling and over-charging is also a contemporary problem. How do we satisfy the client’s needs while obtaining a financial reward that is fair?

We live in a society that is quick to litigate and post blame in all the unlikely quarters except its own, and deny any self-responsibility. This brings with it ludicrous insurance levies and consequent restriction on taking clinical risk to save lives. Finding a balance between all these things is yet another stress borne by the veterinary profession, and one that is unlikely to get much easier with time. Facing such responsibilities as a veterinarian is partly borne by professional veterinary bodies such as the AVA and allied special interest groups, who assist practitioners with problems related to professional and personal issues.

It is hoped that this book can assist veterinarians in understanding the emotional and psychological needs of this unique profession at the personal level. To do this, I have addressed more intimate problems that each of us has faced or will face regarding emotional conflicts, psychological problems, and inter-personal difficulties. This book tries to find the art in science, or more importantly, the artist in the scientist. To do this, it asks that we look at who we are as a person, where we have come from, and why we are here. The more difficult and important issue of where we are going as a person or a profession is solely up to the reader. As a consequence, self-care and self-health emerge as the most important issues discussed. In the pursuit of an occupation which is primarily based on giving of time and effort to the betterment of animals, care-givers are vulnerable to exhausting themselves of compassion. We can learn that ‘care-giving’ in a professional sense can be a mutual act that not only is a gift to the client/patient but also to the giver. We can learn how to manage a professional lifestyle which allows us to be able to provide the best as a veterinarian while being at our best, physically and psychologically. Being driven as a vet solely for the goals of prestige, status or money is also a trap which awaits us. As Albert Einstein once said,

‘No wealth in the world can help humanity forward, even in the hands of the most devoted worker. The example of great and pure individuals is the only thing that can lead us to noble thoughts and deeds. Money only appeals to selfishness and irresistibly invites abuse. Can anyone imagine Moses, Jesus or Ghandi armed with the money-bags of Carnegie?’

Equally as important to avoiding these pitfalls, we must also be aware that being driven solely for the pursuit of knowledge is an empty goal if that we lack mastery and dexterity over this knowledge. Three facets of intellectual mastery which will emerge through this book are;

- Intellectual rigour
- Intellectual resilience
- Intellectual resonance

But before we can begin to explore what these are about and what facets of professionalism produce them, it is worth having a background understanding of where we’ve come from, philosophically and ethically, both as individuals and a profession. This is reflected in the three sections of the book; Section One which looks at philosophy, Section Two which examines ethics and Section Three, which examines what constitutes professionalism at an individual level.
Part 1

Philosophy

'We cannot all be expected to be scientists, but we are so constituted by nature that we can all be artists—not, indeed, artists of special kinds, such as painters, sculptors, musicians, poets, etc, but artists of life. This profession may sound new and quite odd, but in point of fact we are all born artists of life and, not knowing it, most of us fail to be so and the result is we make a mess of our lives, asking 'What is the meaning of life?', etc. As soon as we realise this fact and truth, we will be cured of trouble.'

D.T. Suzuki
We build our lives based on our beliefs, and on what we take to be true. The only drama with this is when we are confronted with something that contradicts or impinges on our so called ‘reality.’ When these two worlds collide, the real world and our reality, often what we took to be true turns out to be false. Our world becomes shaky, our beliefs unstable. Like a spinning top that looses its momentum, our reality begins to wobble. The very foundations of our beliefs reveal their instability. Uncertainty in our convictions can also arise when we discover that other people have different beliefs than we do. Before we discover that our own beliefs are unreliable, we tend to quickly conclude that other people’s conflicting beliefs or the world itself must simply be wrong. It often seems justified to apply any means necessary to eliminate such error so that truth may prevail. Heretics are burned, religious wars mounted. Our world is once again restored to its original egocentricity.

With sufficient maturity a more self-sceptical attitude may develop. One learns through experience that one’s own beliefs are not reliable, that just because one believes a thing does not imply the truth of that belief. Even if one has tested a belief, further experience may shake that belief further by revealing deeper truths. When confronted by two conflicting beliefs, one’s suppositions about the facts may be correct but for the right reasons, or incorrect for the right reasons. What is definite in such a situation is that things are never what they seem. A mature person usually initiates a process of investigation, gathering and weighing evidence, engaging in debate and negotiation. One suspends commitment to one’s own beliefs at least temporarily, attempting to judge impartially between conflicting beliefs based on the facts rather than the vagaries of historically entrenched opinion. This is how mature people deal with the real world. It is a mistake however, to assume that all adults are mature, or that all mature people are adults.

Nothing is as it seems, yet it is not otherwise

*The most incomprehensible thing about the universe
is that it is comprehensible.*

Einstein

What neurophysiologists taught us up until the late twentieth century was that the human brain was ‘hard-wired.’ We were instructed to believe that the brain we are born with is all we’ve got. That we can never know everything and that ‘random’ events which happen outside the square of predicability either proves the square or disprove it. The less often something is disproved, the more likely it is a fact. What we don’t know or aren’t taught is that our brain formulates conceptual structures that are much simpler than the complex phenomena we are attempting to account for. These simple conceptual structures shield us from real-world complexity but also fail frequently as some aspect of what we did not take into consideration makes itself manifest. These simplified concepts contribute to emotional dissonance and anxiety through our perception of the world as a challenging and dangerous place. These ‘random’ events can turn us into rigid opinionated thinkers as we strive to maintain the structure of our no longer valid beliefs. Alternatively, we can face the underlying complexity of experience voluntarily and creatively gather new information and reconfigure the philosophy of our self-imposed image of the world. This is the fundamental element to ‘learning.’

Modern physics suggests that ‘reality’ for humans is a construct of our sensory and conceptual experiences. A newer understanding of reality, ‘the holographic paradigm,’ suggests that the solidity of
matter and space which we see and perceive as reality more closely resembles a 'hologram', with images projected upon the canvas of the mind. The mind mirrors what happens outside the mind (i.e. the body) but we cannot assume that the mirror is a faithful and true representation of what lies outside it. The mind itself is flawed, distorted by our own preconceptions – emotions, which colour and cloud what we see. The old adage, 'I'll believe it when I see it' underpins our distorted view of the world. That which contravenes our belief structure is invisible to us, though it may be right before us. Understandably, men are more prone to such a predicament of being blinded by things right in front of them.

But to understand how the mind can be so imperfect, let us get down to the very basics – the atom. The Greek philospher Democritus (460-370 BC) first proposed the theory of the 'atom,' which meant 'uncuttable.' Plato and Aristotle railed against his theory and the idea of atoms was never accepted until 1803 when John Dalton, an English schoolteacher, revived the idea. In high school, we are taught that all matter and energy are interconnected at the atomic level (e.g. \( e = mc^2 \)). Yet, we are quick to gloss over the fact that what we call atoms only exist because we observe them over a time interval. It is a little known fact that has only arisen in the last ten years that 'matter' as we know it is a mental construct. The chair you sit on, the clothes you are wearing, even the book you hold in your hand have no 'real' mass and is merely an electromagnetic effect at the atomic level that which we register on scales as weight. To understand this, let us reconsider what we know about atoms. As you are probably aware, if an atom is observed for a fraction of a second (a time interval so short as to equate with fractions of a picosecond), then during that brief moment what we observe is 99.9999% empty space. The majority of what we call the atom’s shape is in fact a 'cloud' formed by subatomic activity (a flurried movement of electrons about a nucleus of neutrons and protons).

What is more dramatic is that if we instantaneously stopped an atom, all subatomic particles would be invisible. Not because they aren’t there but that they are indefinable except by electromagnetic standards. There is no 'solidity' to subatomic particles. They hit objects and cause an effect which we think of in terms of momentum, inertia, etc. But these effects are electromagnetic effects which we see and feel as inertia, force, mass, etc. What we call an atom can only be defined in terms of electromagnetic charges (measured in mEv and photons of light), not mass (g). It is only over a time period that an atom assumes mass. And if this sounds bizarre, at any given time an atom’s mass can vary from positive to negative (depending on its inherent energy). Thus, the weight which we assign to the chair we are sitting in does not exist at any instantaneous point in time. It is thus what we call a time-dependant phenomenon. An elegant example of this mutability of mass is seen in Einstein’s thought experiment where a rocket is propelled toward the speed of light. Its mass increases toward infinity as it approaches the speed of light. Thus, a body’s mass or weight are constructs of our three dimensional reality, and in fourth dimensional situations where time can lengthen or shorten, mass can range from infinite negative to infinite positive values. In order to gain an better understanding of an infinite universe, finite-minded scientist use a model known as the spacetime continuum. Minkowski, who also followed on from Einstein, added to the relativity argument by asserting that 'space by itself, and time by itself, are doomed to fade away into mere shadows, and only a union of them as 'spacetime' will preserve their independent reality.' We cannot comprehend what the universe would look like in four, five or six dimensions, any more than an ant can comprehend quantum mechanics. In our human spacetime continuum, mathematics can accurately predict what happens when a rocket is fired into orbit, or a circus clown shoots from a cannon. To think that objects could be unpredictable makes not only for complex mathematics but also psychological complexes.

But as simple as the timespace continuum concept attempts to simplify the universe, it makes some fairly large assumptions, such as there are only three dimensions of space and one of time in order to define what is big, tall or fat. Such gross simplification is fine for teaching high school kids, but is patently hamstrung without use of its full quotient of multidimensional spheres. Long before man first flew to the moon, Aristotle hinted at such a continuum of multi-dimensional states when he referred to the ‘moved movers’. He could not be more specific in describing such things as gravity, black holes and dark matter, but even though he lacked the science, he also conceived a greater physical force which he called ‘the great unmover’, which in physics might relate to energy itself, which can become all things, but itself remains unchanged.

The notion of atoms being weightless, as proposed by modern scientists, does not contravene Einstein’s relativity laws. What the theory does is redefine matter as having two types of mass; one a conventional ‘gravitational’ mass (what can be weighed on the scales; and a result of interatomic
reactions) and an ‘inertial’ or inherent mass (one that varies depending on subatomic energy states, vibrational frequency of electron clouds, orbital spins, etc). Gravitational mass appears to be dependent on inertial mass by modifying the atom’s energy state. Thus, the apparent mass of an atom is not fixed and can be modified energetically. This forms the basis of modern anti-gravity theorems in relativity.

There is no supernatural force at play here, but a mere convention of relativity, which shall be discussed later. For the moment, we can conclude that atomic weight or the appearance to us of its mass is merely the result of a convention known as gravity, produced by electromagnetic and other weak subatomic forces. We normally designate weight to a mole of atoms (Avogadro’s number = 6.02 x 10^{23} atoms). For example, at school, we are taught that a mole of hydrogen weighs 1g and one atom of hydrogen is said to weigh the inverse of Avogadro’s number. However, at the subatomic level weight has no meaning and is said to not exist. It is not that the weight is so small or that the atom disappears, but that at the subatomic level weight is merely a perceived by-product of electrical activity which can be registered on the scales. That’s not to say that if you are overweight, it is an illusion. You probably do need to shed a few pounds, but your weight is nonexistent except over a time interval (usually greater than 10^{-10} seconds). Normally, we forget such brief moments in time and since our mind is incapable of differentiating less than one millisecond or so, it is, relatively speaking, inconsequential.

We are not in fear of suddenly vanishing any more than we are of spontaneous combustion. The concepts we formulate for reality, as we have said, are based on conventions. We all see reality in a macrosecond convention, therefore we all have relatively common realities. And what happens at intervals greater than one or two seconds are what uniquely define our own individual realities, and it is little wonder there are so many versions of reality; one for each person on the planet.

Although intellectually stimulating, what is more important to remember is that time affects the properties of all matter. Einstein’s ‘special theory of relativity’ abandoned the notion of ‘spontaneity.’ It is meaningless to assert that an event here and another event in another galaxy happened ‘at the same time.’ In one of his 1905 papers, Einstein also formulated the idea that energy was packaged in energy bundles, quanta of light, further supported by Max Plank, who popularised quantum theory. Einstein then went on to explore the nature of gravity which he determined to not operate in a passive background of space but which acted by curving time and thus space. This explains that when we approach the edge of the universe, gravity tends to shrink the boundaries of the universe until we are at its very rim, where time bends space backward making escape impossible. This theory might be better understood if we consider the Moebius ring, where the ends of a flat piece of metal are joined together by first twisting them. One can then trace a line along the surface of the ring and traverse both sides without ever coming to an edge and return to the same starting point. The universe, it is presently believed, might be a four dimensional construct of such a ring.

At first, the observable universe (that which is visible to us through telescopes, as opposed to the cosmos which includes the unseen) was considered to be infinite in extent, going on in all directions forever. This theory was considered and rejected as implausible by many philosophers from Plato, Aristotle, Newton and Liebniz. Georg Reinmann was the first of the modern physicists to prove this mathematically. Reinmann viewed the universe as a sphere with no ‘edge’ or boundary. The shape of the visible universe is what’s called a spherical space or hypersphere, twenty billion light years in diameter, which began as a single point the size of a pinhead and underwent inflation (the Big Bang) twenty billion years ago. Using this model, later confirmed by Max Born, Albert Einstein and the formulation of Hubble’s law based on non-euclidean mathematics, Reinmann states that we can start at any point in the universe, continue straight ahead and eventually end up back at our starting point. This theory relies on the premise of an expanding spacetime continuum. Max Born has said that ‘this suggestion of a finite, but unbounded space is one of the greatest ideas about nature of the world which ever has been conceived.’

It becomes apparent then that ‘reality’ merely depends on how you look at it. All matter is, relatively speaking, an illusion of time. That is not to say it doesn’t exist, merely that its fundamental properties are time dependent in the same way that we determine an objects position by its x, y and z co-ordinates on a cartesian map. As we have seen, if we remove any reference to time (i.e. T=0), matter is said to be nonexistent. That is, it is pure potential. To get their head around such a paradox, quantum physicists have laid down a number of ground rules. Thus, to sanely appreciate the finer art of viewing a reality which doesn’t exist except within the confines of time, one has to swallow a few truths, however incompatible they may at first taste.
Buddhism sums this up best in the Heart Sutra which says ‘Form is emptiness; emptiness is form.’ The good news is that our perception of reality can be altered for benevolent reasons. In modern medicine for example, the use of virtual reality computers have been shown to dramatically reduce physical and psychic pain in severe burns, phobias and post-traumatic stress, illustrating how a strong illusion of reality can readily alter our physical perceptions.

The Zen koan ‘the sound of one hand clapping’ is an inquiry into this quantum exploration of subjective vs. objective analysis. To comprehend this, Zen students study the objective and subjective duality of any sensation, in this particular case, that of sound. As we already know, for us to hear something there has to be an object which creates the sound (two hands, not one), a subject to receive the sound (the listener) and a third phenomenon, the sound itself (clapping). Our ability to hear something is thus dependant on two other phenomenon, the object and the sound itself, rather than us being independent of them. This dependant reality (of subject and object being dependent upon each other and the third phenomenon, energy) is at the heart of the aforementioned quantum paradox. In this particular Zen koan, we examine all forms of sound, and after excluding them from the subject/object perspective, we come finally to the point of soundless sound, to that which is when it isn’t, which is the sound of one hand clapping. Jesus said it more succinctly when he remarked ‘When you make the two one, you will go into the kingdom.’

If this were true, what becomes of objective reality? Put quite simply, physicists believe it simply ceases to exist. Though we aren’t entirely sure how this works, it does however open another Pandora’s box, namely that the electrons in a carbon atom in the human brain might be connected to the subatomic particles that comprise every salmon that swims, every heart that beats, and every star that shimmers in the sky. Subatomic particles have been shown to communicate instantaneously at hyper-light speeds. Everything interpenetrates everything, and although human nature may seek to categorise and pigeonhole and subdivide phenomena, the universe is essential illusory. That is not to say that it doesn’t exist. What it rather suggests is an intimate and seamless interconnection of all things in a seamless web. Recently, some physicists have even gone so far as to speculate that universe may be fundamentally conscious; that it is alive, aware and intelligent, that it is not an end product of evolution but a creator of life, and that consciousness (energetic connectedness) is everywhere. What religious people call God, physicists are now calling ‘zero point energy’ - the infinite interconnected energy simultaneously existing at every point in space. These physicists, amongst them Steven Hawking, George Ellis, and Roger Penrose, conclude that the universe is able to simultaneously (i.e. non-locally) records all information ever produced in the universe through a conscious non-timespace continuum that transmutes electromagnetic energy and matter into other energy patterns (including multidimensional realms). They believe that in this state ‘we not only perceive union with zero point energy, we transcend our local selves such that we recognise ourselves as zero point energy.’ As far reaching as this may sound, the number of theoretical physicists taking interest in this novel hypothesis are growing. They suggest that not only space, but also time has a beginning - at the moment of creation. Extending the argument even further, another physicist, Amati, believes the moment of creation was not a time or place but a thought (zero point potentiality).
‘The paradoxes of interchangeable mass, energy and time are explained by accepting objects as possibilities or possibility waves. For example, when you see a chair, you see an actual chair, you don’t see a possible chair. This is called the ‘quantum measurement paradox.’ The brain is made up of atoms and elementary particles, so it cannot convert its own possibility wave into actuality. Yet since consciousness doesn’t need to obey quantum physics (‘thought’ is not made of material), it can convert possibility into actuality. Thus consciousness is transcendent. Consciousness can be said to create the material world through the conversion of possibility into actuality. In other words, consciousness creates the manifest world.’

Whether such a contentious argument is valid or not, one cannot say. But suffice it is to say that we should admit that there is more to reality than what we imagine. And though this may be thought of as being deconstructive, starting with such doubt gives us a better chance of arriving at a likely truth, than to start with a deduced fact and more likely end in doubt. As we shall see in later chapters, far more revelatory science has emerged from such a methodology of doubt than with inductive hypotheses.

Only recently have mathematicians begun to define what is known as Chaos Theory. First popularised in Steven Spielberg’s movie *Jurassic Park*, Chaos theory studies less complex systems in nature (e.g. snowflakes, or sea shell shapes) and attempted to apply mathematics to them. For example, chaos mathematicians study the weather as a model for generating unpredictability. They have ascertained that there is a ‘butterfly effect’ which affects all complex, nonlinear systems and that infinitely small changes in the starting conditions of a system can produce dramatic outputs for that and other seemingly-unrelated system. String Theory, an emerging mathematical discipline in itself, attempts to bridge or string chaotic events with ordered events by linking them with ‘strings’ of alternative quantum relativities. Thus, what appears random may in fact be an ordered event (over there) impacting another region (here), giving the ‘illusion’ of randomness or chaos. But though mathematics can be elegant and aspire to heights of the ineffable, what does it have to do with a suburban veterinarian who is more concerned about improving his clinic’s income? Perhaps the effects of this are subtle, but modern paradigms such as these suggest that all our actions, not just subatomic ones, are more interconnected with other objects/persons/groups in far more profound ways than we can imagine. It may help us to reflect on the impact our aggressive marketing strategies have on our neighbouring practice’s income but also on our own long term income. It may also reduce our predisposition to over-servicing or over-charging clients knowing that what we do here impacts over there, and what impacts over there impacts back over here. It may be so, or it may be not, but then there may be truth to the cliché that ‘what goes around, comes around.’

The German philosopher Immanuel Kant (1724-1804) thought that how individuals see their world is not actually through experience of the objects, but through inference of them. Just like we wouldn’t consider a photograph of a chair to be an actual chair, we should not consider the interpretations from our eyes, hands, etc. of a chair to adequately represent the chair. In truth, all we experience is a representation of the chair. In his transcendental aesthetic, Kant attempted to reveal what is actually real through a two-step process:

‘First, isolate sensibility by taking away from it everything which the understanding thinks through its concepts, so that nothing may be left save empirical intuition. Secondly, we shall also separate off from it everything which belongs to sensation, so that nothing may remain save pure intuition and the mere form of appearances, which is all that sensibility can supply a priori.’

**The ghost in the machine**

When we refer to a ‘ghost’ in the machine, we imply that there is a mystical or sublime operator or puppeteer (soul) which moves the human body. The term was first coined by Arthur Koestler in his book *The Ghost in the Machine*. From biblical times, humans were given dominion over the animals and,
Unlike animals, were said to have a divine soul. It wasn’t until 1838 that this was seriously questioned.

‘Man in his arrogance thinks himself a great work, worthy of the interposition of a deity. More humble and, I believe, true to consider him created from animals.’

This was what Charles Darwin wrote in a notebook some years before he published *The Descent of Man*. By the 1970s, animal liberation movements worldwide began to question the importance of humans as a species. It threw into doubt our spiritocentric beliefs and instead demanded we move beyond our speciesist morality and give equal consideration to the interests of all animals who are sentient (i.e. able to feel pleasure, pain and feelings).

Being of one species cannot be an ethical defense for putting our interests above those of another species

In evolutionary biology, mutations have been proposed as the driving force for natural selection, but at the molecular level, the situation is life or non-life. It is hard to use mathematical probability to explain mutations as the origins of the genetic code. The ‘zero point,’ the moment when there wasn’t life and when life first began, is hard to imagine. Life, we assume, either exists or it doesn’t. It is inconceivable that anything can be half alive as it is to imagine a female ‘half pregnant.’ How then might an organism come into being when moments before it was merely a motley collection of proteins in a primordial soup? Evolutionary biologists argue that enormous selective pressures were exerted on this primitive life form, giving rise to the first genes of life. From an organic soup of small molecules and macromolecules to a primitive living organism is a giant step in imagination. The basic structures necessary for life must arise from a random assortment of lipids and protein molecules to form membranous structures within which were trapped polynucleotides, polypeptides, and other substances. Many of the monomers synthesised enzymatically by cells are thought to have originally accumulated spontaneously on Earth as a result of non-enzymatic reactions. From here on, evolution is relatively simple to understand. According to evolutionary biology, life on earth began 3.8 billion years ago in the form of single-celled bacteria. Just 540 millions years ago during the Cambrian era most of the multicellular organisms began to form. It is generally believed at present that life evolved from three ancestor cells; archaea, bacteria and eubacteria. These were thought to be the very first living cells on Earth, from which all other life forms evolved. The archaea, only recently discovered, was thought to be the ‘prototype’ cell which later vanished without trace leaving the bacteria and eubacteria behind which later evolved into bacterial, animal and plant cells. Whether archaea, bacteria and eubacteria all lived at the same time is not known but it is theorised in Darwin’s ‘doctrine of common descent’ that these cells were highly dependant upon each other for survival, transferring genes within each species through horizontal gene transfer until some point at which independent life was possible and species began to form. It was during this time that the first land-dwelling animal was thought to exist. The Tardigrade or ‘water bear’ was thought to arrive accidentally on the surface and lived in the tidal regions of prehistoric waters, surviving on moss and bacteria at the edge of the water.

Though archaea and tardigrade make good science stories, how exactly did the first ‘step’ take place for the appearance of these first life forms. It has been calculated that the probability for formation of a set of 238 proteins, the minimum number that would sustain life, would be in the order of 1 in $10^{29345}$, completely out of the realm of comprehension. Sir Fred Hoyle, British mathematician and astronomer, declared in *Nature* magazine (November 12, 1981) that ‘the chance that higher life forms might have emerged in this way (evolution) is comparable with the chance that a tornado sweeping through a junk-yard might assemble a Boeing 747 from the materials therein.’ However, biologists argue that in the time scale of infinite universal time, this random chance is no different to someone winning the Lotto – someone *always* wins, eventually.

One might then ask that if the first primitive life form did eventually assemble into a sustainable cellular form, what ‘motivated’ that organism to continue living? Richard Dawkins in his book *The Blind Watchmaker* avoids this question entirely. He proposes that once life begins, it continues. Yet in random molecular sorting there is no mathematical model to explain ‘cohesion’ of life-sustaining molecules. Once a molecule is formed, laws of entropy would then break down these arrangements into other molecules. Thus we then must consider the possibility that life has a ‘stickiness’ about it - an as yet undefined force which maintains molecular integrity and simultaneously allows more complexity to build from it (i.e. growth, reproduction). Whether this cohesion or stickiness is a consequence of the
emergence of a ‘life force’ or whether the stickiness is a pre-existing universal force is hard to determine. Nonetheless, cohesiveness or stickiness of biological molecules would explain why once random assortment starts life, it should perpetuate.

Long before Charles Darwin, Christian beliefs held the fore, with science based on the ideas of Plato and Aristotle. In the medieval world philosophers respected their predecessors and accepted their methods. If a new discovery about nature contradicted one of Aristotle’s principles, it was the new discovery that was in error. Up until the start of the Enlightenment period at the end of the eighteenth century, philosophers were content to accept appeals to Aristotle’s authority. It was only with revolutionary thinkers such as Hume, Descartes, Kant and others that science began to progress and our understanding of nature expand, which could not have been done without rejecting some of Aristotle’s assumptions. It was not only Aristotle that was being questioned, but also political and religious ideas.

While evolution is now accepted as a fact by science and is becoming accepted by the Catholic Church, the mechanism underlying its most important aspect, evolutionary progress, is not clearly established. Even science acknowledges that the mechanism depends on very long streaks of luck. The evidence for evolutionary progress is thin, and a working model has not been demonstrated. Thus consensus within science has not been reached as to the ‘motive’ behind evolution. Charles Darwin stated in *The Origin of Species*:

‘the geological record is extremely imperfect and this fact will to a large extent explain why we do not find intermediate varieties, connecting together all the extinct and existing forms of life by the finest graduated steps. He who rejects these views on the nature of the geological record, will rightly reject my whole Theory.’

Out of the millions of fossils in the world, not one transitional form has been found. All known species show up abruptly in the fossil record without intermediate forms. Darwin said that embryological evidence was ‘second to none in importance.’ The idea of ontogeny recapitulating phylogeny or the theory that higher life forms go through the previous evolutionary chain before birth was popularised by Ernst Haeckel in 1866. It was later found that Haeckel forged the diagrams which he used as evidence for the theory. Also arguing against recapitulation is the fact that different higher life forms experience different stages in different orders, and often contrary to the assumed evolutionary order. Likewise, there is not a trace at a molecular level of the traditional evolutionary series; fish to amphibian to reptile to mammal. Incredibly, humans are closer to lamprey than are fish. However, modern biology rejects Haeckel’s theory. While for instance the phylogeny of humans as having evolved from fish through reptiles to mammals is generally accepted, no cleanly defined ‘fish’, ‘reptile’ and ‘mammal’ stages of human embryonic development can be discerned. The fact that the strict recapitulation theory is rejected by modern biologists has sometimes been used as an argument against evolution by creationists. The argument is:

‘Haeckel’s theory was presented as supporting evidence for evolution, Haeckel’s theory is wrong, therefore evolution has less support’.

This argument is not only an oversimplification but misleading because modern biology does recognise numerous connections between ontogeny and phylogeny, explains them using evolutionary theory without recourse to Haeckel’s specific views, and considers them as supporting evidence for that theory.

**Cartesian philosophy**

‘The search for the exotic, the strange, the unusual, the uncommon has often taken the form of pilgrimages, of turning away from the world, the ‘Journey to the East,’ to another country or to a different religion. The great lesson from the true mystics, from the Zen monks, and now also from the Humanistic and Transpersonal psychologists – that the sacred is in the ordinary, that it is to be found in one’s daily life, in one’s neighbours, friends and family, in one’s own back yard, and that travel may be a flight from confronting the sacred – this lesson can be easily lost. To be looking elsewhere for miracles is to me a sure sign of ignorance that everything is miraculous.

*Abraham H. Maslow*

René Descartes is universally acknowledged as the father of modern Western philosophy. It is to the writings of Descartes that we must turn if we wish to understand the great seventeenth-century revolution in which the old scholastic world view slowly lost its grip and the foundations of modern
philosophical and scientific thinking were laid. The range of Descartes’ thought was enormous, and his writing oeuvre covered subjects such as mathematics, physics, astronomy, meteorology, psychology, physiology and ethics. In his *Rules for the Direction of Our Native Intelligence*, he remarks:

‘The sciences as a whole are nothing other than human wisdom, which always remains one and the same, however different the subjects to which it is applied. The knowledge of one truth does not, like skill in one art, hinder us from discovering another; on the contrary, it helps us… It must be acknowledged that all the sciences are so closely interconnected that it is much easier to learn them all together than to separate one from the other. If someone seriously wishes to investigate the truth of things, he ought not to select one science in particular, for they are all interconnected and interdependent.’

It was with the intention of extending mathematical method to all fields of human knowledge that Descartes developed his methodology, the cardinal aspect of his philosophy. He discards the authoritarian system of the scholastics and begins with universal doubt. But there is one thing that cannot be doubted: doubt itself. This is the kernel expressed in his famous phrase, *Cogito, ergo sum* (I think, therefore I am). From the certainty of the existence of a thinking being, Descartes passed to the existence of God, for which he offered one proof based on St. Anselm’s ontological proof and another based on the first cause that must have produced the idea of God in the thinker. Having thus arrived at the existence of God, he reaches the reality of the physical world through God, who would not deceive the thinking mind by perceptions that are illusions. Therefore, the external world, which we perceive, must exist. He thus falls back on the acceptance of what we perceive clearly and distinctly as being true, and he studies the material world to perceive connections. He views the physical world as mechanistic and entirely divorced from the mind, the only connection between the two being by intervention of God. This is almost complete dualism. The development of Descartes’ philosophy is in *Meditationes de prima philosophia* (1641); his *Principia philosophiae* (1644) is also very important. Descartes argues that all knowledge is certain and evident. Someone who has doubts about many things is no wiser than one who has never given them a thought; indeed he appears less wise if he formed a false opinion about any of them. Hence, he concludes, it is better never to study at all than to occupy ourselves with objects that are so difficult that we are unable to distinguish what is true and what is false. When we study science, we ought to investigate what we can clearly and evidently intuit or deduce with certainty, and not what other people have thought or what we ourselves conjecture.

Though he has said much about so many things, his most popular remarks relate to existential existence.

‘If Socrates says that he doubts everything, it necessarily follows that he understands at least that he is doubting, and hence he knows that something can be true or false, etc; for there is a necessary connection between these facts and the nature of doubt. The union between such things, however, is contingent when the relation conjoining them is not an inseparable one. There are many examples of things which are necessarily conjoined, even though most people count them as contingent, such as ‘I am, therefore God exists’, or ‘I understand, therefore I have a mind distinct from my body.’

Descartes was a product of the church and his philosophy reflected the times in which he lived. Descartes was a dualist, i.e. he believed that humans were of two natures, a spiritual nature and a temporal nature. By pure deduction Descartes evolved for himself entire universes that neither he, nor anyone else, could perceive by the use of their natural senses. All that was necessary, for Descartes, was intense self examination and intense reason, and, through this process, all would be revealed.

All of nature, Descartes posited, was merely an array of machines created by God, the engineer, who then put a piece of his God-mind into his favourite robot - humans - so that he, too, could create machinery. To arrive at this assertion, Descartes first concludes that there is a God, which although unprovable per se, he decides as being self-evident. He states that God is defined as a supremely perfect being. Descartes never attempts to prove the unprovable, merely that if God is perfect, it then follows that God must exist. In the human mind, a state of perfection cannot exist, therefore the human mind is inherently imperfect. That such a state of perfection is imaginable therefore implies this imaginable quality or essence must exist because we have thought of it. This circuitous reasoning leads to the general assumption that whatever is conceivable to the human mind is potential viable in the universe, whether we are able to prove it or not. Such an assumption leads inexorably to an investigation into the
nature of mind vs. reality and mind vs. morality, beyond the scope of Descartes’ theories at the time he was investigating them.

For example, let us consider an individual who is capable of imagining an antisocial view of reality and correlating it to social norms. This individual would differ dramatically from the social majority who refrain from escaping into the shadow-self by conforming to social, moral and religious values. It would be a logical assumption that the next step would be a moral and social degeneration where others are degraded at the expense of the one individual. This non-Euclidean concept (where the whole is greater than the sum of the parts, yet the parts taken individually have a value less than or equal to zero) is classically seen under totalitarian and fascist regimes. In such regimes, individuals are inherently valueless yet necessary for the overall functioning of the ‘social machine’. In such states the individual is of no worth except when considered as part of a collective whole. Consider the typical ‘inner child’ performances of Hitler who believed ‘Germans were nothing without Germany.’ Let us therefore acknowledge that not all things which are imaginable are necessarily right or beneficial. In light of more modern utilitarian models, Cartesian logic has thus become superseded, though not irrelevant.

According to a recent article, forty percent of American physicists, biologists and mathematicians still believe in God. They believe not in just some metaphysical abstraction but a deity who takes an active interest in their affairs and hears their prayers. Spirituality is an inherent component of being human and is subjective, intangible, and multidimensional. Spirituality and religion are often used interchangeably but the two concepts are different. Spirituality involves humans’ search for meaning in life, while religion involves an organised entity with rituals and practices about a higher power or God. Spirituality may be related to religion for certain individuals but for others such as atheists it may not be.

Because some veterinarians have a religious belief, this belief system alters significantly their perspective on the perception and treatment of animals. The ancient Greeks were a classic example of how a polytheistic religion which subordinated animals to mere chattels was detrimental to animal’s well-being. For example, Pythagoras, a well known mathematician, philosopher and mystic, was so excited to have elucidated the equation for the isosceles triangle that he was said to have wanted to sacrifice a thousand cattle to thank the Gods. Fortunately for the animals and the town’s livelihood, he was convinced otherwise.

If there is no intervention in the fate of a person, how do we know whether there is a God or not? God, if God exists, can only be conceived as a non-interventionist, and the respect which Descartes has paid throughout his scientific career to this divine benefactor may well be founded on a dialectic of corporeality. Descartes’ reasoning is a prelate for a non-interventionist God and suggests that perhaps our most enlightened states are those which attempt to err on the side of God; that is to say, an act which attempts to abolish ignorance, or at least attain a state of reduced error. Inaction, in this case, is also a form of error, since sometimes inaction is based in ignorance. To not act against an injustice is to not see an injustice, and as Descartes quite clearly explains, ‘If I deny in such a case, …I shall not be free, for it is evident that perception (knowledge) always precedes free will’.

This begs the question of motivation by the self toward compassionate acts. According to Cartesian logic, the belief in a Christian God is commensurate with a belief in divine judgment. From an epistemological standpoint, the notion of human will is consciously steered by divine salvation or retribution - that is, all actions are either erroneous or good, motivated as they are by a goal-orientated ideology. Platonic theorists agree with this concept of an inherent ‘goodness’ in people. Yet, Plato ascribes that being good does not necessarily imply feeling good about it. It is this distinction in which free will operates - i.e. knowing what is the right thing to do, even if it feels bad, is the important thing.

Descartes in his book *Meditations* said that ‘my essence consists solely in the fact that I am a thinking thing.’ Essence, by definition, is the characteristic or intrinsic feature of a thing which determines its identity, whether this description is of a perfect or imperfect form. Descartes, when referring to his essence, referred specifically to a non-corporeal self beyond the limitations of the body. The body as a composite of muscles, connective tissue, bones and fluids is not, Descartes believed, the place of residence for the mind. If this were true, then the identity of self could be found resident in a particular organ system or a collection of organs. Descartes did not say ‘I walk, therefore I am’, or ‘I breathe, therefore I am’. There is a clear delineation of mind versus non-mind, establishing the premise *a priori* that selfhood (or mind) resides in a non-corporeal place contained within the body, yet not
contained by it. Put simplistically, a dualism of mind over matter. In order to establish this investigation, Descartes had to travel the logical path of other philosophical investigators who have explored the similar concept of self and its identity with thought. He does not say that without thinking he did not exist, although he equivocates strongly for an immortal mind. What he did however argue was that human's rationality or logic which defines our essence is a unique facet to being human. Descartes categorically places human logic on a pedestal over animal instincts. Cartesian logic uses causality versus logic as an argument for human superiority over animals. For example, if a dog is speared with an arrow, the reactions the animal makes in response to the painful experience are purely reflex or instinctual response, without any inherent cerebration or intrinsic worth.

'It is the soul that sees,' Descartes cries when examining the motions of a dog writhing in pain, 'and not the eye.' Such an argument negates the suffering of animals, belying the Cartesian belief that human intellectual resonance has dominion over the animal kingdom by our ability to transcend experiences via knowledge. Descartes powerful observations did however relegate animal ethics to the wastelands of philosophical research for the next three hundred years. Anthropomorphism was to Descartes merely placing into an animal's mind something unprovable, untenable and as absurd as 'imagining a horse with wings.' That Christians believe animals to be soulless lies behind this distinction of Descartes', a logic ultimately shipwrecked on didacticism.

Descartes, unaware of modern quantum physics, was left to struggle with his limited tools of analysis, finding only a limited quota of laws with which to formulate his next major tenet, namely causality, or the nature of volition or will. Causality is a long explored phenomenon of nature, studied extensively in modern physics, Eastern religion and Ancient Greek philosophy. Simple Newtonian laws of causality, which decree that all actions evoke an equal and opposite reaction, have been shown to be redundant in complex systems. Complex systems such as organisms, social behaviour and weather patterns involve the use of multcentric physical factors beyond the complexity of simple action-reaction laws. Hume, excited by the ideas of Isaac Newton and the parallels between consciousness and Newtonian ‘hard massy and impenetrable atoms’, believed erroneously that fundamental forces such as these operate at the conscious level.

Causality occupied a great presence in Descartes' theories of existence. His primal investigations of causality are founded on what he terms ‘free will.’ He says that humans have two choices - knowledge and error. When it comes to error, ‘it is not a simple defect, but a lack of some knowledge.’ Causality, and its relationship with knowledge, was pursued by Descartes with passion. He spent considerable effort to route out the cause of intellectual error or ignorance, and its causes. The concept that there is a God and yet God made humans imperfect, smacks to Descartes of free will, something which to modern science can be construed as an argument for the non-existence of a God entirely. Hume, a long time believer in causality and disbeliever in theology, states in his book *A Treatise on Human Nature* that ‘all of nature is founded on the relation of cause and effect and that this relation is neither near or remote, direct or collateral.’ Yet he goes on to say that ‘were there nothing to bind them, their relation would be entirely precarious.’ Descartes concept of free will, it seems, is nothing if not a nebulous thing.

Long before Jesus pressed his case for spiritual supremacy before the Roman governor Pontius Pilate, Plato theorised the idea of the human ‘soul,’ supposedly driven by love (eros) and expressed through speech (logos). In expressing itself, Plato says, the soul uncovers (remembers) its divine origin. The renaissance of Platonic spirituality in the twentieth century is seen in the new-age spiritualists; a melange of platonic and neo-platonic philosophies, seasoned with a multicultural mix of eastern religions. Plato’s soul, so the argument goes, has a need to find in its own self-made harmony. Its destiny is investigated in Plato’s *Phaedo*, when faith in its eternity helps it accept the death of the body. As a prelude to this trilogy, Plato depicts in the *Symposium*, the dialectics of eros, the soul’s driving power, that may lead it from the physical love of one body all the way up to the intellectual love of everlasting ‘ideas.’

Descartes, no doubt cognisant of Plato’s description of the soul, but firmly entrenched in Christian theology, delineates two types of soul action; those which are will (logos) driven, and those desire (eros) driven. The non-corporeal soul can act wilfully either in harmony with desire or in disharmony, depending on a person’s state of logos. As Descartes describes in *Passions of the Soul*, human desire involve feelings connected with bodily feelings or possessions, whereas human will, which he compares to notions of choosing or deciding, is not associated with the body per se. Where
Cartesian logic fails in not exploring the supposition that free will may inherently be a human delusion. Descartes investigates the notion of ‘thinking’ as being equated to ‘being.’ This correlates to the analogy of a pebble dropped into a pond. Cartesian philosophers assume that if they see ripples, there must always be a pebble that has been dropped. According to Cartesian schools, non-thinking is still thinking, albeit subtle, an argument similar to Buddhist philosophy.

Nagarjuna (200 BC), one of Buddhism’s foremost philosophers, described how our notion of free will is derived from subtle or gross delusions of the mind. Although Buddhists argue that there is pre-determined fate, free-will is also pre-determined based on the capacity of the ego to operate. Our only possibility for acting with free will lies in our ability to manipulate or subjugate our ego (renunciation) for higher (more spiritual) purposes. Nagarjuna posits that only in a state of quiescence (ego-sublimation) does self-hood show its inherent nature, which is nothingness.

‘Happiness alone exists, not the happy person. No doer is found, save only the deed of doing. Nirvana is, but not the person who seeks it. The path exists, but not the person on it.’

This duality of nothingness, where mind can exist without thought, will or God admits the possibility of inherent sentience to the universe, embracing a far greater circle of life. If it was self-evident to Descartes that sentience exists and God exists, and that humans must therefore have free will, does it not also seem evident that wherever sentience exists, therefore must be included a degree of free will, essence and therefore a degree of selfhood? Descartes opines that free will is limitless, yet does not consider the notion that free will may of itself be self-existing. That is to say, free will may, by Descartes own reason, have a capacity to be inherently self-governing, autonomous and omnipotent beyond the confines of mortality. To give free will a life of its own, so to speak, is to move it into the realms of physics, as if it behaved similar to quantum physics, where subatomic particles appear inherently autonomous, yet behave irrationally when subjected to external forces. Although it would have been beyond Descartes scope of knowledge to predict subatomic research of the twentieth century, his theories of free will are not negated by advances in Chaos, String and Relativity theories.

Following from his famous line ‘cogito ergo sum,’ Descartes proposes that thought is non-corporeal (i.e. not associated with the brain). He alludes to a ‘supernatural’ mind capable of transcending corporeal existence. Contrary to modern scientific beliefs, he believed that that the mind (that which thinks) is non-corporeal, inherently existent and eternal. This concurs with his first epistemological argument that God exists. That is, God exists, and the mind, being able to conceive of an omniscient, omnipresent and omnipotent being, therefore contains the essence of these things as well. Descartes remained until his death a Christian-based philosopher. Twentieth century scientific philosophers, however, adopt a more non-religious stance - ‘I think therefore I am and when I die, I am probably not.’ Unable to disprove Descartes, modern scientific thought avoids the argument entirely, rather than trying to prove the unprovable.

Socrates, the gadfly of Athens, made the bold statement, ‘I know not, therefore I know something.’ This is a classic negation of nihilism. To begin in certainty necessitates that we end in doubt, whereas Descartes infers that to begin in doubt by attempting to prove the existence of mind provides a chance of arriving at a certainty that the essence of mind exists. Ockham’s razor (a theory which states that entities should not be multiplied more than necessary; or ‘the simplest theory is usually the right one’) suggests that it is more likely that God does not exist based on absence of proof, but this would simplify what is inherently a complex issue. To say that mind is corporeal (derived by the brain function) negates the notion of will as being more than a function of rationality and something far more transcendent. Yet Descartes’ apparent concept of a dualistic mind which can only exist when I think is in itself flawed, knowing as we do that humans exist even when no longer conscious. This suggests that mind has the capacity to potentially transcend consciousness in some as yet defined way, being of a nature that is neither dualistic, nihilistic or existential, but likely all three or none. Knowledge it seems, might be the way that human free will works on the conscious level, albeit subtly. According to Hume, knowledge and thus the regulation of human free will ‘is not attained by reason a priori but entirely from experience.’ Like Buddha’s promise that ‘all are borne into suffering and all are able to liberate themselves from suffering,’ Descartes maintains that knowledge will liberate the mind, if not the soul. Though Hobbes asserts that mind, reason and intellect may be corporeal and that human nature differs only in degree of complexity from the inner workings of a clock, the existence of a corporeal soul or a non-corporeal soul is as yet unprovable. That this can’t be proved does not mean it is flawed, merely that it is beyond contemporary philosophy to expunge.
In science, Descartes discarded tradition and to an extent supported the same method as Francis Bacon, but with emphasis on rationalisation and logic rather than upon experiences. In physical theory his doctrines were formulated as a compromise between his devotion to Roman Catholicism and his commitment to the scientific method, which met opposition in the church officials of the day. Mathematics was his greatest interest; building upon the work of others, he originated the cartesian coordinates and Cartesian curves; he is often said to be the founder of analytical geometry. To algebra he contributed the treatment of negative roots and the convention of exponent notation. He made numerous advances in optics, such as his study of the reflection and refraction of light. He wrote a text on physiology, and he also worked in psychology; he contended that emotion was ultimately a physiological one and debated how the control of the physical expression of emotion would control the emotions themselves. His chief work on psychology is in his *Traité des passions de l’âme* (1649).

Descartes, it would seem, in his philosophical work, continued along the same lines of the church philosophers: the deductive approach of accepting notions which have no basis in reality, and then to proceed to build on those. No one can trust the result of such a process: a conclusion can never be more trustworthy than the premises on which it is built. For one to profess a belief in such a process is to profess one’s ignorance of the fundamental universal principles, or natural laws, which have guided man along a very long evolutionary past.

**Descartes proposals**

<table>
<thead>
<tr>
<th>That which is conceivable, exists. Therefore God exists</th>
<th>That which is conceivable, is only conceivable within the limitations of the mind. God cannot be proven, only perceived</th>
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<tbody>
<tr>
<td>I think, therefore I am</td>
<td>To sense and to feel are qualities of all animals, including humans. Descartes’ ‘I’ (the ego) exists in all animals. In humans, egoless states (non-'I') of awareness and perception exists after split-brain operations, in multiple personality disorders and during transcendental meditation.</td>
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<tr>
<td>The bible says animals don’t have souls, therefore animals are soulless automatons</td>
<td>Sentience, not souls, is the essential distinction. The ‘dominion’ of humans over animals is a contrived notion</td>
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Descartes adopted the strategy of withholding his belief from anything that was not entirely certain and indubitable. To test which of his previous beliefs could meet these conditions, he subjected them to a series of sceptical hypotheses. For example, he asked himself whether he could be certain he was not dreaming. His most powerful sceptical hypothesis, that there is an evil genius trying to deceive him, challenges not only the belief that the physical world exists, but also belief in simple statements of fact, and thus would seem to call into question the validity of reason itself. But not even an evil genius could deceive someone into believing falsely that he existed. ‘I think, therefore I am’ is thus beyond sceptical doubt. From this Archimedean point, ‘I think, therefore I am,’ Descartes attempted to regain the world called into doubt by his sceptical hypotheses. His solution to the problem was rejected by later generations, however, and philosophers have been struggling with scepticism - especially scepticism about the existence of the physical world - ever since.

Descartes is known as the father of the mind-body problem. He claimed that human beings are composites of two kinds of substances, mind and body. A mind is a conscious or thinking being, that is, it understands, wills, senses, and imagines. A body is a being extended in length, width, and breadth. Minds are indivisible, whereas bodies are infinitely divisible. The ‘I’ of the ‘I think, therefore I am’ is the mind and can exist without being extended, so that it can in principle survive the death of the body. Despite having different natures, Descartes thought that mind and body causally interact. The human mind causes motions in the bodies by moving a small part of the brain. Motions in that same part of the brain produce sensations and emotions. This problem of whether mental entities are different in nature from physical entities continues to be a primary concern of philosophers and psychologists.
Descartes stated that bodies differ from how they appear through senses. Colours, sounds, tastes, smells, heat, and cold are merely sensations existing in thought, and there is nothing in bodies that resembles them, just as there is nothing in bodies that resembles our sensation of pain. Instead the properties of bodies are those which are capable of being quantified, namely, extension and its modes, shape, size, and motion. He denied the existence of a vacuum, because what one would be inclined to call empty space meets his definition of body in virtue of being extended in three dimensions. All the phenomena in the created world external to human beings, such as gravity, magnetism, and the cohesion of bodies, as well as the complex functioning of living organisms including human bodies, he believed could be explained solely by mechanistic physics, that is, by the motions and collisions of bodies. He even denied that consciousness must be attributed to animals in order to explain their behaviour. Although his laws of impact, his vortex theory of gravity, and his denial of a vacuum were rejected as physics developed, he deserves credit for one of the first formulations of the law of inertia, which he justified by appeal to the immutability of God.

Descartes influenced not only the rationalist thinkers who were his immediate followers, but also the whole course of modern philosophical inquiry, and the Cartesian quest for certainty gave Epistemology the central place in philosophical thought it has maintained to this day. In the final analysis, the subject of philosophy as a science was not much advanced by Descartes. It was not until Francis Bacon and those that came after him, before a scientific method, inductive thinking, could be utilised for scientific understanding to advance significantly.

Julien de La Mettrie (1709-1751) was a French physician and philosopher who offered a materialistic account of human nature. He rejected cartesian dualism and explained mental activity by reference to physiology. In his book *Man a Machine*, he explained physiology in purely mechanistic terms. On this view, human conduct inevitably flows from physical causes, leaving no grounds for free will or moral responsibility. The Cartesians were correct when they regarded all animal behaviour as emerging from soulless machines, La Mettrie maintained, but the same explanation will also account for human behaviour.

**Epistemology**

*Man prefers to believe what he prefers to be true.*  
Francis Bacon

Our knowledge of who we are as individuals gradually evolved over centuries. The questions which were asked in the time of the pyramids, 1,000 years and more before Christ, have remained essentially unchanged today. Philosophers have for thousands of years debated at length as to whether or not there is a ghost within the machine of the human body, and if there was a ghost, whether animals had one too. What was this ghost? How could it be detected, studied, weighed, measured? Running parallel with these philosophical inquiries about what humans were, was a growing body of scientific evidence about the natural world. Humans grew more knowledgeable about the birds and the bees and the mighty seas. It seemed that the greater our knowledge of our planet and the universe, the more complex the conundrum of our existential life. Scientists in the nineteenth century felt that it was very likely that soon they would solve the mysteries of the universe and thus prove one way or the other the ultimate question of who we are. If they could solve the puzzles ‘out there’ in the stars and stripes of the cosmos, then these same truths would divulge the flagging riddle ‘in here.’ But attempts to answer the hard questions of life grow more nebulous as every answered question raises a further two. The great ‘Why?’ of science still continues as a philosophy known as epistemology.

The word Epistemology originates from the Greek word *episteme*, meaning ‘knowledge’ and *logos*, meaning ‘theory.’ It is a branch of philosophy that addresses the philosophical problems surrounding the theory of knowledge. Epistemology is concerned with the definition of knowledge and related concepts, the sources and criteria of knowledge, the kinds of knowledge possible and the degree to which each is certain, and the exact relation between the one who knows and the object known.

In the 5th century BC, the Greek Sophists questioned the possibility of reliable and objective knowledge. Can we really be sure that anything is real, even me who is asking this question? A leading Sophist of the time, Gorgias, proposed that nothing really exists, that if anything did exist it could not be known, and that if knowledge were possible, it could not be communicated. It’s hard to imagine such a man like Gorgias could be popular but it seems he was, for reasons of originality. It seems that few before his time were really so cynical! Another prominent Sophist, Protagoras, maintained that no
person's opinions can be said to be more correct than another's, because each is the sole judge of his or her own experience. Plato, following his illustrious teacher Socrates, tried to answer the Sophists by postulating the existence of a world of unchanging and invisible forms, or ideas, about which it is possible to have exact and certain knowledge. The things one sees and touches, they maintained, are imperfect copies of the pure forms studied in mathematics and philosophy. Accordingly, only the abstract reasoning of these disciplines yields genuine knowledge, whereas reliance on sense perception produces vague and inconsistent opinions. They concluded that philosophical contemplation of the unseen world of forms is the highest goal of human life.

Aristotle followed Plato in regarding abstract knowledge as superior to any other, but disagreed with him as to the proper method of achieving it. Aristotle maintained that almost all knowledge is derived from experience. Knowledge is gained either directly, by abstracting the defining traits of a species, or indirectly, by deducing new facts from those already known, in accordance with the rules of logic. Careful observation and strict adherence to the rules of logic, which were first set down in systematic form by Aristotle, would help guard against the pitfalls the Sophists had exposed. The Stoic and Epicurean schools agreed with Aristotle that knowledge originates in sense perception, but against both Aristotle and Plato they maintained that philosophy is to be valued as a practical guide to life, rather than as an end in itself.

After many centuries of declining interest in rational and scientific knowledge, the Scholastic philosopher Saint Thomas Aquinas and other philosophers of the Middle Ages helped to restore confidence in reason and experience, blending rational methods with faith into a unified system of beliefs. Aquinas followed Aristotle in regarding perception as the starting point and logic as the intellectual procedure for arriving at reliable knowledge of nature, but he considered faith in scriptural authority as the main source of religious belief.

From the seventeenth to the late nineteenth century, the main issue in epistemology was reasoning versus sense perception in acquiring knowledge. For the rationalists, of whom René Descartes, the Dutch philosopher Baruch Spinoza, and the German philosopher Gottfried Wilhelm Leibniz were the leaders, the main source and final test of knowledge was deductive reasoning based on self-evident principles, or axioms. For the empiricists, beginning with the English philosophers Francis Bacon and John Locke, the main source and final test of knowledge was sense perception. Bacon inaugurated the new era of modern science by criticising the medieval reliance on tradition and authority and also by setting down new rules of scientific method, including the first set of rules of inductive logic ever formulated. Locke attacked the rationalists' belief that the principles of knowledge are intuitively self-evident, arguing that all knowledge is derived from experience, either from experience of the external world, which stamps sensations on the mind, or from internal experience, in which the mind reflects on its own activities. Human knowledge of external physical objects, he claimed, is always subject to the errors of the senses, and he concluded that one cannot have absolutely certain knowledge of the physical world.

The Irish philosopher George Berkeley agreed with Locke that knowledge comes through ideas, but he denied Locke's belief that a distinction can be made between ideas and objects. The British philosopher David Hume continued the empiricist tradition, but he did not accept Berkeley's conclusion that knowledge was of ideas only. He divided all knowledge into two kinds: knowledge of relations of ideas - that is, the knowledge found in mathematics and logic, which is exact and certain but provides no information about the world; and knowledge of matters of fact - that is, the knowledge derived from sense perception. Hume asserted that most knowledge of matters of fact depends upon cause and effect, and since no logical connection exists between any given cause and its effect, one cannot hope to know any future matter of fact with certainty. Thus, the most reliable laws of science might not remain true - a conclusion that had a revolutionary impact on philosophy.

The German philosopher Immanuel Kant tried to solve the crisis precipitated by Locke and brought to a climax by Hume; his proposed solution combined elements of rationalism with elements of empiricism. He agreed with the rationalists that one can have exact and certain knowledge, but he followed the empiricists in holding that such knowledge is more informative about the structure of thought than about the world outside of thought. He distinguished three kinds of knowledge: analytical a priori, which is exact and certain but uninformative, because it makes clear only what is contained in definitions; synthetic a posteriori, which conveys information about the world learned from experience, but is subject to the errors of the senses; and synthetic a priori, which is discovered by pure intuition and is both exact and certain, for it expresses the necessary conditions that the mind imposes on all objects of
experience. Mathematics and philosophy, according to Kant, provide this last. Since the time of Kant, one of the most frequently debated questions in philosophy has been whether or not such a thing as *synthetic a priori* knowledge really exists.

During the nineteenth century, the German philosopher G. W. F. Hegel revived the rationalist claim that absolutely certain knowledge of reality can be obtained by equating the processes of thought, of nature, and of history. Hegel inspired an interest in history and a historical approach to knowledge that was further emphasised by Herbert Spencer in Great Britain and by the German school of historicism. Spencer and the French philosopher Auguste Comte brought attention to the importance of sociology as a branch of knowledge, and both extended the principles of empiricism to the study of society. The American school of pragmatism, founded by the philosophers Charles Sanders Peirce, William James, and John Dewey at the turn of this century, carried empiricism further by maintaining that knowledge is an instrument of action and that all beliefs should be judged by their usefulness as rules for predicting experiences.

In the early twentieth century, epistemological problems resulted in rival schools of thought emerging. Special attention was given to the relation between the act of perceiving something, the object directly perceived, and the thing that can be said to be known as a result of the perception. The *phenomenalists* contended that the objects of knowledge are the same as the objects perceived. The *neorealists* say that one has direct perceptions of physical objects or parts of physical objects, rather than of one’s own mental states. The *critical realists* took a middle position, holding that although one perceives only sensory data such as colours and sounds, these stand for physical objects and provide knowledge thereof. A method for dealing with the problem of clarifying the relation between the act of knowing and the object known was developed by the German philosopher Edmund Husserl (discussed later). He outlined an elaborate procedure that he called phenomenology, by which one is said to be able to distinguish the way things appear to be from the way one thinks they really are, thus gaining a more precise understanding of the conceptual foundations of knowledge. During the second quarter of the twentieth century, two schools of thought emerged, each indebted to the Austrian philosopher Ludwig Wittgenstein. The first of these schools, logical empiricism, or logical positivism, had its origins in Vienna, Austria, but it soon spread to England and the United States. The *logical empiricists* insisted that there is only one kind of knowledge: scientific knowledge; that any valid knowledge claim must be verifiable in experience; and hence that much that had passed for philosophy was neither true nor false but literally meaningless. Finally, following Hume and Kant, a clear distinction must be maintained between analytic and synthetic statements. The so-called verifiability criterion of meaning has undergone changes as a result of discussions among the logical empiricists themselves, as well as their critics, but has not been discarded. More recently, the sharp distinction between the analytic and the synthetic has been attacked by a number of philosophers, chiefly by American philosopher, Quine, whose overall approach is in the pragmatic tradition.

The latter of these recent schools of thought, generally referred to as *linguistic analysis*, or ordinary language philosophy, seems to break with traditional epistemology. The linguistic analysts undertake to examine the actual way key epistemological terms are used - terms such as *knowledge, perception, and probability* - and to formulate definitive rules for their use in order to avoid verbal confusion. British philosopher John Langshaw Austin surmised that to say a statement was true added nothing to the statement except a promise by the speaker or writer. Austin does not consider truth a quality or property attaching to statements or utterances.

**Phenomenology**

‘*To the things themselves’*  
*Edmund Husserl*

There can be no complete understanding of objective reality without discussing the philosophical movement known as phenomenology. Phenomenology emerged from a twentieth-century philosophical movement dedicated to describing the structures of experience as they present themselves to consciousness without recourse to theory, deduction or assumptions from other disciplines such as the natural sciences. The founder of phenomenology, the German philosopher Edmund Husserl, introduced the term in his book *Ideas: A General Introduction to Pure Phenomenology*. Phenomenology arose at the same time as quantum mechanics began to deconstruct the Newtonian paradigm of a universe operating under the basic laws of thermodynamics, gravity and motion. Husserl
began to philosophise of examining the universe outside of these pre-ordained laws; trying to observe things as if they existed eternally and independently. That one could conceive of anything in such a ‘vacuum’ was at the time considered anathema to logic, and thus irrelevant to serious philosophy.

Early followers of Husserl such as the German philosopher Max Scheler, claimed that the task of phenomenology was to study essences, such as the essence of emotions. Although Husserl himself never gave up his early interest in essences, he later held that only the essences of certain special conscious structures are the proper object of phenomenology. As formulated by Husserl after 1910, phenomenology became the study of the structures of consciousness that enable consciousness to refer to objects outside itself. This study requires reflection on the content of the mind to the exclusion of everything else. Husserl called this type of reflection the phenomenological reduction. Because the mind can be directed toward nonexistent as well as real objects, Husserl noted that phenomenological reflection does not presuppose that anything exists, but rather amounts to a ‘bracketing of existence.’ That is, setting aside the question of the real existence of the contemplated object. What Husserl discovered when he contemplated the content of his mind were such acts as remembering, desiring, and perceiving and the abstract content of these acts, which Husserl called meanings. These meanings, he claimed, enabled an act to be directed toward an object under a certain aspect; and such directedness, called ‘intentionality,’ he held to be the essence of consciousness. Transcendental phenomenology, according to Husserl, was the study of the basic components of the meanings that make intentionality possible. Later, in *Cartesian Meditations*, Husserl introduced genetic phenomenology, which he defined as the study of how these meanings are built up in the course of experience. That something can be studied outside of its existence in time and space was new to Western philosophy, but had been philosophised about *ad nauseum* by Hindu and Buddhist mystics for two thousand years. Yet Husserl, whether ignorant or dismissive of Eastern learning, contented himself with reinventing what was essentially the oriental concept of *Sunyata*, dependent arising. All things are ‘in essence’ or at their very heart, non-existent or indefinable except in relation to something else. Or in deference to the bard, ‘nothing is good or bad except thinking makes it so.’

All phenomenologists subscribe to Husserl’s slogan ‘To the things themselves.’ They differ among themselves, however, as to whether the phenomenological reduction can be performed, and as to what is manifest to the philosopher giving a pure description of experience. The German philosopher Martin Heidegger, Husserl’s colleague and most brilliant critic, claimed that phenomenology should make manifest what is hidden in ordinary, everyday experience. He thus attempted in *Being and Time* to describe what he called the structure of ‘everydayness,’ or being-in-the-world, which he found to be an interconnected system of equipment, social roles, and purposes. Because, for Heidegger, one is what one does in the world, a phenomenological reduction to one’s own private experience is impossible; and because human action consists of a direct grasp of objects, it is not necessary to posit a special mental entity called a meaning to account for intentionality. For Heidegger, being thrown into the world among things in the act of realizing projects is a more fundamental kind of intentionality than that revealed in merely staring at or thinking about objects, and it is this more fundamental intentionality that makes possible the directness analysed by Husserl.

The French existentialist Jean Paul Sartre attempted to adapt Heidegger’s phenomenology to the philosophy of consciousness, thereby in effect returning to Husserl. He agreed with Husserl that consciousness is always directed at objects but criticised his claim that such directedness is possible only by means of special mental entities called ‘meanings.’ The French philosopher Maurice Merleau-Ponty rejected Sartre’s view that phenomenological description reveals human beings to be pure, isolated, and with free consciousness. He stressed the role of the active, involved body in all human knowledge, thus generalising Heidegger’s insights to include the analysis of perception. Like Heidegger and Sartre, Merleau-Ponty is an existential phenomenologist, in that he denies the possibility of bracketing existence. Phenomenology has had a pervasive influence on 20th-century thought and remains one of the most important schools of contemporary philosophy. Phenomenology’s importance to contemporary society is unfortunately limited because if its complexity of philosophy, lacking as it does any simplistic notion that what we experience has meaning beyond the experience itself. For society, a simplified version of phenomenology is absent. Any attempt to grasp phenomenology leads philosophers grasping at existential nihilism, which is not what Husserl envisaged in his life long search for meaning.

As a scientific philosophy, phenomenology holds its ground, but as a contemporary school of thought, it retains its ivory tower image. For those searching for meaning, phenomenology falls short of
explaining the big questions. Modern religions are still far more popular because they at least provide a warm community of hymnal worship for those too busy or uncritical to study and delve the meaning of the Bible, Koran, Talmud or Sutras. And existentialism, born out of the phenomenology’s protracted labour, is readily accessible to today’s youth, who can delight in the nihilistic pursuits of sex, drugs and rock-n-roll while chanting the clichéd mantra of ‘live today for there is no tomorrow.’

Existentialism

*I have nothing to offer anybody except my own confusion*

*Jack Kerouac*

If there is no reason to life, then all there must remain is life. This has been the premise of what became known in the early twentieth century as Existentialism. Many philosophers believed that reason should never share beds with faith. For example, Søren Kierkegaard, the father of existentialism, did not think that it was rational to believe in God, rather one should have faith in God even if this seems to reason to be absurd. God is beyond reason, he contends. But contrary to this, Karl Marx believed that ‘God is merely the imaginative invention of human consciousness.’ Marx believed that a concept of God merely encouraged the oppressed to accept their fate, rather than to oppose it. Marx saw it as counterproductive to his communist ideals. ‘Religion is the sigh of the oppressed, the opium of the people. The abolition of religion is a demand for their real happiness.’ Krishnamurti, although he believed in an afterlife, challenged his followers belief. He said that we should not believe in something after death if it is because we are afraid of dying, or of coming to an end. He questioned this identification with an afterlife as possibly the last desperate resort of the ego to continue its game.

Nietzsche believed that God was merely a human concept. In the period that Nietzsche was writing, existentialism was coming to the fore. Kierkegaard and Nietzsche represented opposite reactions to the inability of rationality to give a rock solid theoretical proof of God’s existence. Kierkegaard called for people to embrace God even if it seemed an absurdity, while Nietzsche said it was time to create a new mode of being with human creativity at its centre. Nietzsche claimed that religion produces two types of characters; a weak servile character that is at the same time strongly resentful towards those in power, and a superman who creates his own values. He suggests that humans have the will power which manifests as artistic and creative energy. The atheist existentialist Jean Paul Sartre accepted Nietzsche’s argument that ‘God is dead,’ and much of his writing is an attempt to look at the human condition in a world that is without a prime mover who could have provided a basis and structure for the understanding of being. But the final meaning of a negative theology, of knowing God by unknowing, of the abandonment of idols both sensible and conceptual, is that ultimate faith is not in or upon anything at all. It is complete letting go. Not only is it beyond theology; it is also beyond atheism and nihilism.

Existentialism, as an atheistic philosophical movement emphasised individual existence, freedom and choice. Elements of existentialism can be found in the thought (and life) of Socrates, in the Bible, and in the work of many pre-modern philosophers and writers. Because of the diversity of positions associated with existentialism, the term is impossible to define precisely. Certain themes common to virtually all existentialist philosophers can, however, be identified. The term itself suggests one major theme: the stress on concrete individual existence and, consequently, on subjectivity, individual freedom, and choice. Most philosophers since Plato have held that the highest ethical good is the same for everyone; insofar as one approaches moral perfection, one resembles other morally perfect individuals. The 19th-century Danish philosopher Søren Kierkegaard, who was the first writer to call himself existential, reacted against this tradition by insisting that the highest good for the individual is to find his or her own unique vocation. As he wrote in his journal, ‘I must find a truth that is true for me… the idea for which I can live or die.’ Other existentialist writers have echoed Kierkegaard’s belief that one must choose one’s own way without the aid of universal, objective standards. Against the traditional view that moral choice involves an objective judgment of right and wrong, existentialists question whether any objective, rational basis can be found for moral decisions. The nineteenth-century German philosopher Friedrich Nietzsche further contended that the individual must decide which situations are to count as moral situations.

It is not surprising then that we find the majority of Western ideology slipping from the embrace of Christendom. The human mind has been asked us to accept modern technology, gene manipulation, robotics, massive economic changes, and the dehumanisation of agriculture. We are no
longer church-going farmers with work to do. The Industrial revolution of the eighteenth century liberated our bodies and now the technological revolution has liberated our minds. Where once we had to contend with ‘idle hands’ we now also have a problem of ‘idle minds.’ Unfortunately, freedom of the body or mind does not always equate with happiness. Where once we had time on our hands, we now have time on our minds. Technology has failed to satisfying our deeper psychological hungers for meaning. A DVD player doesn’t provide happiness for more than a few days. We are, as we were at the advent of the industrial revolution, unable to find ‘fulfilment’ in technology or its by-product, recreation. In the mid twentieth century, we developed ‘an insatiable satiety.’ Western society’s seems to have ignored the Oriental wisdom of ‘less is more.’ Perhaps we have ignored the truth, only to find it ignoring us.

Until recent times, our faith in the Crucifix sustained us, lighting the dark areas of the unknown which technology and philosophy are as yet unable to penetrate. However, because of the complexity of our post-industrial world, the West cannot be satisfied with the simplistic view traditional religions provide. Their simplistic moral values are at odds with complex issues. The bible struggles with answers for such questions as ‘Do we use embryos for scientific research? When is quality of life at odds with quantity? Does a cloned human have a soul?’ Theologians are struggling to define unified answers that satisfy a scientific mind. The movement of Oriental religions into the West has questioned our belief in the Bible. Belief in the historical Christian God is becoming untenable. Secular philosophers are demanding evidence of God rather than religious theory. Having lost faith in traditional religion, many find themselves spiritually and emotionally bankrupt. Without a spiritual context they find that life is meaningless, without any direction.

Nietzsche explained in The Gay Science, present-day society’s loss of faith in the spiritual aspect of their nature and an obsession with secular materialism based on individual assertion. To quote Oliver Stone’s Wall Street, ‘Greed - for lack of a better word - is good. Greed is right. Greed works.’ Nietzsche predicted ‘long nights of ruin, destruction and cataclysm,’ as were seen in Nazi Germany during WWII, where social mores will be run by ‘a monstrous logic of terror which will come as a prophet of gloom, as a solar eclipse whose like has never before been seen.’ He envisaged a long and all-encompassing period of social darkness, and predicted the ruin of a society ‘which having been established upon religious convictions, finds itself devoid of that rubric.’ Nietzsche’s fear of a return to pre-Renaissance superstitions was always paramount in his search for an existential meaning to life. Yet ultimately, Nietzsche was unable to find meaning through a cognitive study of the blood and bones of human existence. He craved a ‘superman’ who could possess complete knowledge of himself through esoteric metaphysics, and thus prove that humans are more than the sum of their thoughts.

Logic then, appears to fall short in determining what or when or how is God. Theologians, who are as unable to prove the existence of God in secular terms, defer to ‘faith’ as the solution. Dissatisfied, science looks elsewhere, usually in genes and galaxies, protons and pulsars. The big picture gives science a humble perspective of human’s role in the universe, and if anything abbreviates our quest for meaning, since our seemingly minute important in the universe belittles an answer.

Existentialists have long opined that free will is proof that God does not exist. If a benevolent God did oversee humanity, then the atrocities of humanity would never have occurred. QED, an interventionist God cannot exist, only a non-interventionist one. The logical corollary is that if a non-interventionist God does exist, does it matter? Free will then takes precedence. Unlike twentieth century existentialism, the concept of free will is as old as humanity itself. However, even though we espouse the notion that we are free to do as we will, yet rarely does such freedom incorporate a sense of self-responsibility. The upsurge in litigation affirms our desperate need to blame others for our misfortunes. We cannot believe that our inner pain is our own responsibility and not another’s.

What is interesting is that when a wise person is hurt by something or someone, they ask ‘What can I do to alleviate this pain?’, ‘What can I do to stop this from happening again?’ ‘Who can help me?’ ‘How can I make sure no one else goes through this pain?’ But when an unwise person is hurt, they ask ‘Who has done this to me?’ ‘Who can I blame for this?’ ‘Who can help me seek revenge for this?’ and ‘How can I hurt them as much as they have hurt me?’ One road leads to peace, the other, constant torment.

We as humans proudly boast our superiority by comparing ourselves to animals whose lives are supposedly driven purely by lower instincts; ants that sublimate their own needs for the colony, bees who dedicate their lives to foraging for nectar for the hive, herbivores that spend eight hours a day eating, etc. Yet when we consider the vast majority of people who dedicate their life to feeding and
clothing themselves and their family, can we honestly say that our motivation is are so vastly different? This is not to demean all human commercial endeavours, but we as professionals have the fortunate situation of being able to give more than this, by developing our knowledge and technical skills beyond the more mundane pursuits of the many. Shouldn’t we make the most of this opportunity to give invaluable contribution of knowledge and service to society in our own unique way?

All existentialists have followed Kierkegaard in stressing the importance of passionate individual action in deciding questions of both morality and truth. They have insisted, accordingly, that personal experience and acting on one’s own convictions are essential in arriving at the truth. Thus, the understanding of a situation by someone involved in that situation is superior to that of a detached, objective observer. This emphasis on the perspective of the individual agent has also made existentialists suspicious of systematic reasoning. Kierkegaard, Nietzsche, and other existentialist philosophers have been deliberately unsystematic in the exposition of their philosophies, preferring to express themselves in aphorisms, dialogues, parables, and other literary forms. Despite their anti-rationalist position, however, most existentialists cannot be said to be irrationalists in the sense of denying all validity to rational thought. They have held that rational clarity is desirable wherever possible, but that the most important questions in life are not accessible to reason or science. Furthermore, they believe that even science is not as rational as is commonly supposed. Nietzsche, for instance, asserted that the scientific assumption of an orderly universe is for the most part a useful fiction.

Perhaps the most prominent theme in existentialism is that of choice. Humanity’s primary distinction, in the view of most existentialists, is the freedom to choose. Existentialists have held that human beings do not have a fixed nature, or essence, as other animals and plants do; each human being makes choices that create his or her own nature. In the formulation of the 20th-century French philosopher Jean Paul Sartre, existence precedes essence. Choice is therefore central to human existence, and it is inescapable; even the refusal to choose is a choice. Freedom of choice entails commitment and responsibility. Because individuals are free to choose their own path, existentialists say that we each must judge the risk and responsibility of following our beliefs, wherever they lead. Kierkegaard held that it is spiritually crucial to recognise that one experiences not only a fear of specific objects but also a feeling of general apprehension, which he called dread. He interpreted it as God’s way of calling each individual to make a commitment to a personally valid way of life. The word anxiety (German ‘angst’) has a similarly crucial role in the work of the philosopher Heidegger; anxiety leads to the individual’s confrontation with nothingness and with the impossibility of finding ultimate justification for the choices he or she must make. In the philosophy of Sartre, the word ‘nausea’ is used for the individual’s recognition of the pure contingency of the universe, and the word anguish is used for the recognition of the total freedom of choice that confronts the individual at every moment.

The first to anticipate the major concerns of modern existentialism was the 17th-century French philosopher Blaise Pascal. Pascal rejected the rigorous rationalism of his contemporary René Descartes, asserting, in his book Pensées (1670), that a systematic philosophy that presumes to explain God and humanity is a form of pride. Like later existentialist writers, he saw human life in terms of paradoxes: The human self, which combines mind and body, is itself a paradox and contradiction.

Existentialism has been as vital and as extensive a movement in literature as in philosophy. The 19th-century Russian novelist Fyodor Dostoyevsky is probably the greatest existentialist literary figure. In Notes from the Underground (1864), the alienated antihero rages against the optimistic assumptions of rationalist humanism. The view of human nature that emerges in this and other novels of Dostoyevsky is that it is unpredictable and perversely self-destructive; only Christian love can save humanity from itself, but such love cannot be understood philosophically. As the character Alyosha says in The Brothers Karamazov (1879-80), ‘we must love life more than the meaning of it.’ In the 20th century, the novels of the Austrian Jewish writer Franz Kafka, such as The Trial and The Castle, present isolated men confronting vast, elusive, menacing bureaucracies; Kafka’s themes of anxiety, guilt, and solitude reflect the influence of Kierkegaard, Dostoyevsky, and Nietzsche. The work of the French Nobel laureate-writer Albert Camus is usually associated with existentialism because of the prominence in it of such themes as the apparent absurdity and futility of life, the indifferrence of the universe, and the necessity of engagement in a just cause. Existentialist themes are also reflected in the theatre of the absurd, notably in the plays of Samuel Beckett and Eugène Ionesco.

Some modern physicists endorse what is known as the ‘anthropic centre.’ This philosophy claims that a number of factors in the early universe had to coordinate in a highly statistical way to
produce a universe capable of sustaining life. Many who adhere to such a principle such as Stephen Hawking, John Leslie and Holmes Rolston argue that it demands some kind of extra-natural explanation. However, one can still hold the anthropic centre and still deny its religious implications. Wittgenstein clarifies this using logical positivistic philosophy, arguing that science and religion are just two different types of language games, and that a belief in either system requires comprehension of the language base and symbolism. In his book *Culture and Value*, Wittgenstein declares that ‘suffering can have a great impact on our beliefs, and that life can force new concepts onto us.’ It is our unique perspective, formed by life experiences, which nurtures our philosophical outlook, and not the other way around.

Neo-Darwinists (scientific naturalists) such as Richard Dawkins use the theory of natural selection to construct an argument against the possibility of a God guiding all biological and human developments. In his book *Blind Watchmaker*, he demonstrates how the theory of evolution is the only theory that is capable of explaining the organised complexity of the universe. He admits that this organised complexity is highly improbable, yet is still the best explanation. Dawkins concludes that religion and science are in fact doomed rivals which make incompatible claims, and that the conflict is resolvable in favour of science. In contrast to scientific naturalism, Charles Taylor writes in *A Catholic Modernity* that Darwinism denies humans any authentic aspirations to goals or states beyond the world in which they live. In contrast to naturalism, Taylor urges a transcendental point of view; that a meaningful life does not equate with a good life. That this transcendence requires a shift from self-centredness (a natural state) to a God-centredness. Unable to find value in suffering and death, Taylor deduces that most people focus on the ordinary life trying assiduously to avoid all pain. Resistance to a person developing a transcendent philosophy on life, Taylor says, is the main explanation for social problems of anger, futility and even contempt for life experiences by self and others. The dialectic between goal expectation and rewards is the myth lurking within capitalist dreams.

**Pragmatism**

Toward the end of the nineteenth century, pragmatism became the most vigorous school of thought in American philosophy. It continued the empiricist tradition of grounding knowledge on experience and stressing the inductive procedures of experimental science. Charles Sanders Peirce, who gave this view its name (from the word pragmatic, meaning practical), formulated a pragmatic theory of knowledge, which defined the meaning of a concept as the predictions that can be made by use of the concept and that can be verified by future experience. William James, whose outstanding work in psychology provided a framework for his philosophical ideas, developed the pragmatic theory of truth. He defined truth as the capacity of a belief to guide one to successful action and proposed that all beliefs be evaluated in terms of their usefulness in solving problems. James justified religion on this pragmatic basis, but, insisting on the finiteness of God, he identified God with the unconscious energy of nature. Pragmatic idealism became a powerful school of thought in Great Britain through the work of Francis Bradley, who maintained, like Hegel, that all things must be understood as aspects of an absolute totality. Bradley denied that relations exist on the ground that no two things exist and that only one real subject of thought can be postulated, the real itself. Whenever a thing is said to have a certain characteristic, then this thing, as subject, must be the entire world and reality itself. Any other assumption would be self-contradictory, because anything less than reality itself has contradictory predicates; a stove, for example, is sometimes hot, but it is also sometimes cold. In France, the most influential view in the early part of the 20th century was the evolutionary vitalism of Henri Bergson, who propounded the *élan vital*, the spontaneous energy of the evolutionary process. Bergson defended feeling and intuition against the abstract, analytical approach to nature of science and science-minded philosophy. The American philosopher, educator, and psychologist John Dewey further developed the pragmatic principles of Peirce and James in a comprehensive system of thought that he called experimental naturalism, or instrumentalism. Dewey emphasised the biological and social basis of knowledge and the instrumental character of ideas as plans of action. He insisted on an experimental approach to ethics - that is, on relating values to individual and social needs. Dewey's theory of education, which stressed the preparation of the individual for creative activity in a democratic society, had a profound influence on educational methods in the United States, long after his death in 1952.

**Modernism**
What could be seen as a rebellion against the existentialist movement was a theological reinterpretation of Christian doctrine in light of modern scientific thought. This movement was called Modernism by Pope Pius X in 1907. The Modernists of the Roman Catholic church tended to deny the objective value of traditional beliefs and to regard some dogmas of the church as symbolic rather than literally true. The leaders among this group included the Irish theologian George Tyrrell, the British theologian Friedrich von Hügel, and the French theologian Alfred Loisy. Modernism in Europe was also a matter of political controversy. Those who supported the traditional views on church and state opposed the Modernists and their drive toward social reforms. Within the Roman Catholic church, the centralisation of church government in Rome and the influence of the Curia were attacked. Church discipline over the clergy was strongly questioned. Perhaps most notable was the movement among scholars to work and publish without supervision from the church.

Censure of the movement reached a climax in 1907. On July 3, 1907, a decree, Lamentabili Sane, was issued by the holy office with the approval of Pius X. It listed and condemned as heretical, false, rash, bold, and offensive many propositions of modernism relating to biblical criticism. On September 8 of the same year, the pope issued an encyclical, Pascendi Dominici Gregis. Modernism, it said, is a synthesis of all heresies, ‘an alliance between faith and false philosophy,’ arising from curiosity and ‘pride, which rouses the spirit of disobedience and demands a compromise between authority and liberty.’ Pius concluded his attack on the movement on Sept 1, 1910, in his statement Sacrorum Antistitum (Oath Against Modernism). He gave assent to all articles of Roman Catholic belief and dissented from all the tenets in all times condemned by the church of Rome. In the same document, he required an anti-Modernist oath from all clerics in the Roman Catholic church.

A corresponding movement among Protestants had also been developing. If one accepted the historical findings of biblical scholars and the so-called higher criticism, questions arose that could not be answered in terms of traditional beliefs. The philosophical emphases of the Enlightenment of the late 18th century and the contemporary re-examination of the sources of personal religious expression added force to such questions. Prominent among Protestant Modernists were the German theologians Friedrich Schleiermacher and Albrecht Ritschl. These Protestants attempted to find new interpretations of religious experience and an understanding of history that could accommodate the implications of the theory of evolution and discoveries in psychology, archaeology, and ancient history. To a large extent, they denied literal inspiration of the Bible and the historicity of the Jesus Christ of the Gospels. They stressed ethical and moral behaviour, rather than adherence to formal creeds, as essential to Christian life. They turned the activity of church officials to social areas and away from academic issues.

**Semiotics**

Semiotics is the study of signs and symbols, especially spoken or written signs. It is a science concerned with all processes of information interchange in which signs feature. Human beings talk, write, blink, wave, and disguise themselves. They put up signposts and erect barriers to communicate messages to other people. They produce and interpret signs. But even if no-one intends to communicate anything, sign processes are taking place: a doctor interprets the symptoms of a disease, a dog follows a trail, a thief triggers an alarm. Semiotics explores all such processes with regard to common structures. Its scope reaches far beyond the area of cultural phenomena and involves the interaction of animals, the activity of orientation and perception of all living things, the stimulus and response processes of animals and plants and even the metabolism of organisms and information processes by machines. Umberto Eco jokingly suggests that ‘semiotics is a discipline for studying everything which can be used in order to lie. Whether used as a tool for representing phenomena or for interpreting it, the value of semiotic analysis becomes most pronounced in highly mediated, post-modern environments where encounters with manufactured reality shift our grounding senses of normalcy.

The study of signs and their interpretation shares classical origins with rhetoric and poetics in the early writings of the Sophists, Aristotle, Plato, and Cicero. The philosopher John Locke considered the ‘semiotike’ doctrine of signs to be one of the three major disciplines of science along with natural philosophy and practical ethics. There are two major traditions in modern semiotics: Ferdinand. de Saussure (1857-1913), a Swiss-French linguist whose study of language structures led to the formal discipline of semiology; and Charles Sanders Peirce (1839-1914), an American chemist and philosopher, who applied an extension of logical reasoning from the natural sciences to explain the manner that we
extract meaning from signs. Independently, Saussure and Peirce worked to better understand the relationship between physical signs and human understanding. In semiotics of animals (biosemiotics) Heini Hediger was one of the first zoologist who realised that there is no such thing as an animal that is free in anthropomorphic sense: ‘the free animal does not live in freedom: neither in space nor as regards its behaviour towards other animals. Animals in the wild are bound by space and time, by sex and social status’. Hediger also elaborated on the distinction between nest and home, the former being a repository for eggs and raising the young and the latter a place of refuge, which is the function of the home. Having enormous experience in ecology of animal behaviour both in the field and in captivity, Hediger doubted the somewhat rigid interpretations of the instinct (the ritualistic behaviour in the first place, adopted by ethology as a science of species-specific behaviour of animals. Indeed, the vast diversity of deviations from the main schemes of instincts within one and the same species, the flexibility and continuity of the adaptive behaviour of animals give us reason to believe that the individual organism itself is the most active interpreter of the innate mechanisms of behaviour. Hediger distrusted the accepted evolution theory, not accepting the claim that the two major constructors of speciation are mutation and selection. And Hediger certainly was not a behaviourist in classical sense. He operated with conceptual notion-instruments signal–structure in the cases where the behaviourism would apply the famous stimulus–reaction scheme instead. In all his studies and encounters with animals in the field and in the zoo, Hediger’s attention was driven to the biological meaning of the signal — an impulse of information passing between animal and other components of the environment including all human factors as well. Aleksei Turovski, a contemporary Estonian behaviourist remarks, ‘If I were told that an octopus can talk in, say, English or Russian, I would consider it simply as a fact of its personal biography. What it is talking about is the only thing that matters to me’.

Hediger emphasises the absolute necessity of understanding the actual animal-human encounter situations by their signs as examined from animals’ point of view in the first place, in order to find optimal means of control. The biologist Chesteron has been quoted as saying that ‘people never answer what you say. … They answer what they think you mean’. Actually animals act in the same way and it is, essentially, up to the inquisitive interrogator – humans - to arrange ‘the questionnaire’ by meanings. That is, to formulate it semiotically in elaborated sets of signs, fitted in to the space-time structure of a particular animal species sphere of understanding. In the course of a life time, that is in embryonic, postnatal, juvenile, sub-adult, sexually mature adult and post-mature periods an animal passes through a succession of very different behavioural stages of orientation to other animals (and man) as objects of its attention. One of the important attitudes in this process besides the motivational attitudes to resources, foes, sexual partners, social ranks, broods etc., is the fulfilment of the need to be impressed by changing signals - impulses of information from the environment, otherwise indifferent in the aspects of major biological needs/functions. The matrix structure of the environment of the animal obviously transforms these signals into signs in accordance with the prevailing motivations; so the forms of the environment become semiotically-involved in unique personal experience of the animal in dependence on its ontogenetic age-period. Such a ‘need for impression’ is presumably coupled with the need to impress and thus to provoke feedback signals which also contribute to the process of semiosis. Man has been making use of the need for impression, calling it ‘natural curiosity’ of animal, in taming and domestication.

Another important distinction in semiotics is between horizontal semiotics and vertical semiotics. Horizontal semiotics is concerned with sign processes unfolding in the spatial or ecological dimension, and comprises most of what was above described as endo- and exosemiotics. Vertical semiotics studies the temporal or genealogical aspects of semiotics: Heredity, i.e. the transmission of messages between generations through the interdependent processes of reproduction and ontogenesis. From a semiotic point of view this transmission is based on an unending chain of translations of the hereditary messages back and forth between the digital code of DNA and the analog code of the organism. A crucial - but often overlooked - fact about this process is that DNA does not contain the key to its own interpretation. In a way the molecule is hermetic. In the prototype case of sexually reproducing organisms only the fertilised egg ‘knows’ how to interpret it, i.e., to use its text as a kind of receipt specifying how to construct the organism through the integrated processes of cell division, differentiation, and migration. The interpretant of the DNA message is buried in the cytoskeleton of the fertilised egg (and the growing embryo), which again is the product of history, i.e., of the billions of molecular habits having been acquired through the evolution of the eukaryotic cell in general and the successive phylogenetic
history of the species in particular.

Life, then, exhibits a non-trivial, semiotic, interaction between two co-existing messages, the analog-coded message of the organism itself and its redescription in the digital code of DNA. This principle has been termed code-duality. As analog-coded messages the organisms recognise and interact with each other in the ecological space, while as digitally-coded messages they (after eventual recombination through meiosis and fertilisation in sexually reproducing species) are passively carried forward in time between generations. The essence of heredity is ‘semiotic survival’.

Biosemiotics has become visible in the realm of natural science and philosophy as an emerging network of ideas, concepts and hypothesis of what constitutes life - involving biologists, semioticians, philosophers and other scholars. Biosemiotics can be seen either as an alternative scientific paradigm in the making, or as an alternative philosophy of nature with special focus on the problems of biology. Hoffmeyer remarks that ‘Rather than understanding biology as a separate layer between physics and semiotics, we should then see biology as a science of the interface in which these two sciences meets, an interface in which we study the origin and evolution of sign processes, semiosis’.

Biosemiotics provides a theoretical framework for understanding living systems very differently from the idea that cells and organisms are simply organised organic molecules. Biosemiotics attempts to provide a profound set of tools for thought to re-evaluate biology as we know it, to reorganise data and empirical findings in a new architecture, that is, to envision a way to understand the evolution of microorganisms, plants and animals on Earth which does not make it a mystery how the human mind could develop within the physical Universe, or how something with phenomenal properties, such as pain, can emerge. According to this view, life, signs, cognition, and interpretation are tightly interconnected, and thus biology (the science of life) and semiotics (the science of signs, their action and interpretation) may not only offer much to one another, but may even belong to one and the same ontological domain.

**Scientific Method**

Scientific Method is a term denoting the principles that guide scientific research and experimentation and also the philosophic bases of those principles. Whereas philosophy in general is concerned with the *why* as well as the *how* of things, science occupies itself with the latter question only, but in a scrupulously rigorous manner. The era of modern science is generally considered to have begun with the Renaissance, but the rudiments of the scientific approach to knowledge can be observed throughout human history. Definitions of scientific method use such concepts as objectivity of approach to and acceptability of the results of scientific study. Objectivity indicates the attempt to observe things as they are, without falsifying observations to accord with some preconceived world view. Acceptability is judged in terms of the degree to which observations and experimentations can be reproduced. Scientific method also involves the interplay of inductive reasoning (reasoning from specific observations and experiments to more general hypotheses and theories) and deductive reasoning (reasoning from theories to account for specific experimental results). By such reasoning processes, science attempts to develop the broad laws - such as Isaac Newton's law of gravitation - that become part of our understanding of the natural world.

Science has tremendous scope, however, and its many separate disciplines can differ greatly in terms of subject matter and the possible ways of studying that subject matter. No single path to discovery exists in science, and no one clear-cut description can be given that accounts for all the ways in which scientific truth is pursued. One of the early writers on scientific method, the English philosopher and statesman Francis Bacon, wrote in the early 17th century that a tabulation of a sufficiently large number of observations of nature would lead to theories accounting for those operations - the method of inductive reasoning. At about the same time, however, the French mathematician and philosopher René Descartes was attempting to account for observed phenomena on the basis of what he called clear and distinct ideas - the method of deductive reasoning.

A closer approach to the method commonly used by physical scientists today was that followed by Galileo in his study of falling bodies. Observing that heavy objects fall with increasing speed, he formulated the hypothesis that the speed attained is directly proportional to the distance traversed. Being unable to test this directly, he deduced from his hypothesis the conclusion that objects falling unequal distances require the same amount of elapsed time. This was a false conclusion, and hence, logically, the first hypothesis was false. Therefore Galileo framed a new hypothesis: that the speed attained is directly proportional to the time elapsed, not the distance traversed. From this he was able to
infer that the distance traversed by a falling object is proportional to the square of the time elapsed, and
this hypothesis he was able to verify experimentally by rolling balls down an inclined plane.

Such agreement of a conclusion with an actual observation does not itself prove the correctness
of the hypothesis from which the conclusion is derived. It simply renders the premise that much more plausible. The ultimate test of the validity of a scientific hypothesis is its consistency with the totality of other aspects of the scientific framework. This inner consistency constitutes the basis for the concept of causality in science, according to which every effect is assumed to be linked with a cause. Scientists, like other human beings, may individually be swayed by some prevailing world view to look for certain experimental results rather than others, or to intuit some broad theory that they then seek to prove. The scientific community as a whole, however, judges the work of its members by the objectivity and rigour with which that work has been conducted; in this way the scientific method prevails.

The myths of science

To say of what is that it is not, or what is not that it is, is false;
while to say of what is that it is, or what is not that it is not, is true.

Aristotle

Society during the sixteenth to eighteenth century was rarely influenced by philosophers. Prior to the eighteenth century favoured developments in the life sciences (largely for medical research) and astronomy (for navigation and a record of the passage of time - also a source for early mythology and folklore). Science was viewed as purely a philosophic endeavour, where little research was conducted beyond the most useful fields. Indeed, philosophy and science were inseparable in several emerging disciplines (this is always true of new fields where no firm basis of study has yet been conducted). Prior to the mid-eighteenth century, the general European populace randomly dotted the land in small agricultural communities, industry was run out of country cottages, and scientific developments were nearly at a standstill. Suddenly, without much of a transition, new pockets of industry arose, focusing towards large-scaled machines rather than small hand tools; large industrial corporations often crushed small agriculturally centred commerce; and in many areas, city life rendered country farm cottages obsolete. Coinciding with an era of vast social and political changes, this historic event would later come to be called the Industrial Revolution. If necessity is the mother of all invention, then the Industrial Revolution was the mother of all necessities. Horrible living conditions in the overcrowded industrial cities bred a plethora of diseases. This along with other results of spontaneous urbanisation demanded that science address the problems of an ever-changing human civilisation. Science of the Industrial Age responded to such needs by centring on medical advances in the early stages of the revolution. Such was the era of crucial medical breakthroughs, and an age of great physiologists such as Marie Curie (radium), Wilhelm Roentgen (x-rays), Louis Pasteur (pasteurization), Edward Jenner (smallpox vaccination), Joseph Lister (bacteria antiseptic), and Charles Darwin (evolution).

The creation of scientific ‘truth’ is not based upon reality but on the tradition of inherited fragmented knowledge. Science is tentative and provisional. Due to the specialisation aspect it is not even internally verifiable outside the narrow field of specialty, since no single individual is capable of possessing the entire knowledge base. Despite this, it holds a position of trust and authority within society which can in part be attributed to its presentation of a united front towards the public (where competing truths are minimised). So on some level it has perhaps become externally dogmatic - through the acceptance of the scientist as ‘expert’ authority. One of the major concerns here is the trust and authority aspect which is implicit both outside and inside the realm of science. This makes it incompatible with the general ethic of science, and the democratic individualistic society. The ideal vision of science is based upon reason and experience. However, the acumen and complexity of modern day science is so large that this rationalistic vision of science is no longer possible. Specialisation and the intellectual division of labour preclude it. One could say that science has become the ‘new priesthood’ - not through choice or design but through the outside public perception mirrored onto it🎄.

Society is often guilty of embracing scientific fact as truth because of the plausibility of the scientific argument, yet future research can disprove it. Thus, scientist’s attempt to remain unfettered by ‘flights of fancy’ when they evaluate truths. Experimentation has an assumption of ‘if… then,’ as its intention. However, many experiments utilise the ‘what if.’ premise, which is far more serendipitous, illogical and liable to unexpected outcomes. One could contend that modern science is now evolving
from fundamentalism to neo-renaissance, a form of joi de science propelled by improved social infrastructure and higher standards of Western living. The Industrial era’s motivation for a science which would liberate them from the tedium of labour has evolved into a science which will liberate us from boredom. It is contentious that science no longer asks ‘why?’ but ‘why not?’ The hyperbole of this scientific momentum is unknown, but invites speculation.

Science develops by inducing new knowledge from observation. From observation, we ‘induce’ a theory to explain what we see. A problem with induction, first articulated by Hume, is that as theories are founded upon past observations then we are supposing that the future will resemble the past. If there is any suspicion that the course of nature will change then the past will be of no rule for the future and all experience becomes useless. Thus we can infer no conclusions. This method of scientific investigation was de rigueur until Sir Karl Popper, a renowned British philosopher, published The Logic of Scientific Discovery (1934) which posited a new approach to investigating phenomena. Though immediately labelled as a logical positivist (and hence hostile to qualitative research), Popper suggested that meaningful research can be reduced to simple, observation statements. For Popper, the scientist begins with problems and puts forward trial solutions. These are subjected to rigorous testing aimed at falsifying them. Popper suggested that the way to test whether or not a theory is scientific is to ask yourself, ‘what would it take to make this theory false?’ If the answer is nothing, it isn’t science. Popper believed that falsification was what distinguished science from non-science. This methodology works by the fact that science tests its ideas through attempted falsification, whereas non-science tests its ideas through attempted refutation. A legal analogy to Popper’s scientific approach is to assume that all are guilty before the law until proven otherwise.

Popper then extended his philosophy of critical scrutiny to politics in his book The Open Society and Its Enemies (1945), advocating an open society against the dictates of political leaders. He rejected the idea that political leaders can impose their value system on the population at large by virtue of a supposed greater knowledge of the human condition and its history. There can be no such knowledge as history is affected by discoveries that will be made in the future of which we know nothing. Moreover any policy has unforeseeable and unintentional consequences. The only way to overcome these, Popper suggested, was to allow those affected by these consequences to voice criticism, change policies and change their rulers. In Popper’s opinion this ability to change is the mark of an open society.

Those ignorant of science often wonder why scientists call some things facts and others theories. The difference for lay people is so sublime as to be inconceivable. When Einstein formulated his theory about relativity, the newspapers headlines about the facts of bending space and the limitations of light speed. The Philadelphia Experiment in the USA, a CIA-motivated ploy to materialise a warship in another country, using the special theory of relativity was a classic example of mass delusion. It was not a question of whether the theory was right or not, but that the government immediately assumed it to be. Trembling with the repercussions of his research, Einstein rapidly began to back-pedal about using his postulates for mass manipulation and mass destruction. He asked that science be given the chance to test the waters of his theories before diving in the deep end. As is often the case with rampant enthusiasm, impatient scientists decided it best to test the water with both feet. Witness Hiroshima, where atomic theory worked on by Einstein, Heisenberg and Oppenheimer, was tested ‘in the field’ before any control experiments or ethical debates were conducted prior to its employment. With the wisdom of hindsight, scientist now manacle research to ethics – as in the case of genetic engineering – in the hope we avoid another potential armageddon.

Unfortunately, all knowledge is value-laden. It is an instrument or a tool, nothing more. But because of its capacity to serve humans, it is never neutral. Facts about the natural world change and shape societies more powerfully than biological disease. The invention of steam power reshaped European society. The invention of combustion engines and electricity turned a slowly evolving Western culture into a maelstrom of frenetic activity. Nothing is more potent, and potentially destructive than knowledge. It is the currency of all societies. It runs Wall Street. It feeds the world. It imprisons political reactionaries. It has saved millions of lives through vaccine development and destroyed millions more through pollution, deforestation and war. Science is not evil. It is merely indifferent. How could gravity ever be evil? Laws of nature are only labelled as such by our perceptions. It is only human manipulation of physical laws that makes science good, bad or indifferent. The reason behind this is that individual emotions, personal experiences and unique shades of meaning all colour our perceptions. Certainly the relative meaning, importance and value of scientific research findings are
contested within and without the research community. In science, the consequences of operating without a lucid set of guiding principles can be grave. Numerous assumptions and practices inscribed in our professional mentality can lead to excesses or abuse of power. An eminent American psychologist, Richard Dawes, has recently questioned how much of our personal beliefs are genuinely ours and not the product of social manipulation:

‘Behind the worlds we construct, coloring both our logic and our rhetoric, are the ideologies that give our world views their dominant cast. Such ideologies are complex and not easily analysed. As forms of human thought ideologies permeate virtually every aspect of our mental life including our science. We ignore them at our intellectual, social and personal peril.’

The evolution of scientific research has seen the growth of myths which stem from the application of research findings into the public domain. William McComas has identified ten myths of scientific research which can be summarised as follows:

- **hypotheses become theories which become laws** - One does not become the other no matter how much empirical evidence is amassed. Laws are generalisations, principles or patterns in nature and theories are the explanations of those generalisations. For instance, Newton described the relationship of mass and distance to gravitational attraction between objects with such precision that we can use the law of gravity to plan spaceflights. During the Apollo 8 mission, astronaut Bill Anders responded to the question of who was flying the spacecraft by saying, ‘I think that Isaac Newton is doing most of the driving fight now.’ His response was understood by all to mean that the capsule was simply following the basic laws of physics described by Isaac Newton years centuries earlier.

- **an hypothesis is an educated guess** - the term hypothesis has at least three definitions, and for that reason, should be used with caution. For instance, when Newton said that he framed no hypothesis as to the cause of gravity he was saying that he had no speculation about an explanation of why the law of gravity operates as it does. In this case, Newton used the term hypothesis to represent an immature theory.

- **evidence accumulated carefully will result in sure knowledge** – As a process of scientific investigation, ‘induction’ was first formalised by Frances Bacon in the 17th century. In his book, *Novum Organum* (1620), Bacon advised that facts be assimilated without bias to reach a conclusion. The method of induction he suggested is the principal way in which humans traditionally have produced generalisations that permit predictions. However, recent philosophers such as Popper have shown inductive science to be essentially flawed.

- **a general and universal scientific method exists** - Philosophers of science who have studied scientists at work have shown that no research method is applied universally. The notion of a single scientific method is so pervasive it seems certain that many students must be disappointed when they discover that scientists do not have a framed copy of the steps of the scientific method posted high above each laboratory workbench. Closer inspection reveals that scientists approach and solve problems with imagination, creativity, prior knowledge and perseverance. These, of course, are the same methods used by all problem-solvers. Science is no different from other human endeavours when puzzles are investigated.

- **science and its methods provide absolute proof** - Accumulated evidence can provide support, validation and substantiation for a law or theory, but will never prove those laws and theories to be true. Quantum mechanics has shown innumerable times the uncertainty of most laws of physics which we take for granted.

- **science is procedural more than creative** - In her book *They’re Not Dumb, They’re Different* Shiela Tobias suggests that many capable and clever students reject science as a career because they are not given an opportunity to see it as an exciting and creative pursuit. The moral in Tobias’ thesis is that science itself may be impoverished when students who feel a need for a creative outlet eliminate it as a potential career because of the way it is taught.

- **science and its methods can answer all questions** - Science cannot answer all the moral and ethical questions social advancement engenders. Scientists as individuals have personal opinions about many issues, but as a group they must remain silent if those issues are outside the realm of scientific inquiry. Science simply cannot address moral, ethical, aesthetic, social and metaphysical questions.
scientists are particularly objective - Scientists, like all observers, hold a myriad of preconceptions and biases about the way the world operates. These notions, held in the subconscious, affect everyone's ability to make observations. It is impossible to collect and interpret facts without any bias. There have been countless cases in the history of science in which scientists have failed to include particular observations in their final analyses of phenomena. This occurs, not because of fraud or deceit, but because of the prior knowledge possessed by the individual. Certain facts either were not seen at all or were deemed unimportant based on the scientists' prior knowledge.

experiments are the principle route to scientific knowledge - Copernicus and Kepler changed our view of the solar system using observational evidence but neither performed experiments. Charles Darwin, for his most revolutionary discoveries, recorded observations in notebooks annotated by speculations and thoughts about those observations. Scientific knowledge is gained in a variety of ways including observation, analysis, speculation, library investigation and experimentation.

all work in science is reviewed to keep the process honest - With the pressures of academic tenure, personal competition and funding, it is not surprising that instances of outright scientific fraud do occur. However, even without fraud, the enormous amount of original scientific research published and the pressure to produce new information rather than reproduce others' work dramatically increases the chance that errors will go unnoticed.

People often make faulty assumptions about how science operates. They assume science calls only for logic, not imagination, that if you can’t explain how you got the answer you’ve failed, that there’s only one right way to do a science experiment or solve a scientific problem, that if you don’t have a good memory, forget about science and that there is a magic secret to doing well in math or science. These assumptions can be easily refuted. To begin with, scientists regularly talk about the importance of creativity and imagination in their work. At times they find it hard to explain how they arrive at a particular hypothesis or conclusion. Few of them boast about exceptional memories. And as far as we know, the only secret they count on is hard work. McComas was perhaps more articulate than many scientists when he said:

‘Only by clearing away the mist of half-truths and revealing science in its full light, with knowledge of both its strengths and limitations, will learners become enamoured of the true pageant of science and be able fairly to judge its processes and products.32’

When we think about scientific research, it is essential to not label what emerges from an experiment as anything other than results. If the experiment is verifiable and reproducible, we then have valid arguments for classifying these results as a probable theory. The wider and far-reaching social implications of what scientists do can never be predicted by one person, and in many cases by a society as a whole. Often it is only in hindsight that we can predict why something happened. But knowing the potential for humans to attach value to knowledge, it pays to be aware of the value of science in the greater domain. Does genetic engineering of crops constitute a threat to natural ecosystems? Is the manufacturing of inter-species animal hybrids immoral? The answers to these and other questions can only be found in dusty history books of the twenty-first century. It is hard enough to begin knowing what we don’t know. Thus, how can we know what we are not aware of. If the invention of in-vitro fertilisation was considered at the time as immoral by many secular and religious groups, we cannot expect present-day scientists to answer the harder moral and ethical questions about emerging scientific discoveries. Be glad of what resides within your test-tube, but be ever mindful that revolutions, social and otherwise, have been started over less.

The origins of life

‘Believe those who are seeking the truth; doubt those who find it.’
Andre Gide

When it comes to the origins of life, whether it be human, animal, plant or galaxy life, the two main protagonists in this debate have been the Creationists and the Evolutionists. Ever since Charles Darwin first proposed the Theory of Natural Selection, a battle has been raging over who is right. Is life about Genes or God? Did life arise by mere chance through a freak electrical discharge which ignited life and allowed it to evolve through the effects of genetic evolution? Or were we spontaneously created by a divine being or intelligent design? Cardinal Baronius (1598) explained the difference between religion
and science when he famously quipped, ‘the Bible was written to show us how to go to heaven, not how the heavens go.’ Science shares with religion the claim that it answers deep questions about origins, the nature of life and the cosmos. But there the resemblance ends. Scientific beliefs are supported by evidence and they get results, whereas myths and faiths do not. One does not rely on faith, whereas the other does.

At present, scientists theorise that the universe is expanding, and not just slowly but exponentially. The constants of nature (speed of light, gravity and charge of electrons) may not be as constant as we once believed. We now know that the structure of the universe around us is determined by constant values which can only exist if the universe has many more dimensions than originally thought. If we consider the question ‘How did the Universe get started?’, most physicists postulate that the Universe is self-creating. They don’t state a ‘cause’ behind the origin of the Universe, nor that there is a lack of purpose or destiny, simply that the Universe was emergent, that the actual of the Universe probably derived from a indeterminate sea of ‘potentiality’ that they call the quantum vacuum, whose properties may always remain beyond our current understanding. Extrapolation from the present back to the moment of Creation implies an origin of infinite density and infinite temperature (all the Universe’s mass and energy pushed to a point of zero volume). Such a point is called the cosmic singularity. The cosmic singularity that was the Universe at the beginning of time is shielded by the lack of any physical observers. But the next level of inquiry is what is the origin of the emergent properties of the Universe, i.e. the properties that become the mass of the Universe, its age, its physical constants, etc. The answer appears to be that these properties have their origin as the fluctuations of the quantum vacuum. The properties of the Universe are said to come from ‘nothing,’ where nothing is the quantum vacuum, which is a very different kind of nothing. If we examine a piece of ‘empty’ space we see it is not truly empty - it is filled with space-time. Space-time has curvature and structure, and obeys the laws of quantum physics. Thus, it is filled with potential particles, pairs of virtual matter and anti-matter units, and potential properties at the quantum level. Even Einstein, who pondered this problem at considerable length, got it wrong. His concept of the universe as a static phenomenon was thrown into doubt when Edwin Hubble proposed the notion of high red-shift electromagnetic radiation from supernovas. Sadly, Einstein declared his cherished theory of a static universe an error of judgement - mein grösster Fehler (my greatest mistake).

Around this time, mathematicians began using a new branch of geometry that better describes the curvature of space than conventional Euclidean geometry. These new geometries became known as non-Euclidean and physicists began to make calculations for the universe’s age and dimensions. In 1931, the Czech-born mathematician Kurt Gödel recognised these implications and struggled to produce an ontological proof for the existence of God (a proof based on the definition of ‘God’). Sounding more and more like a Cartesian philosopher, Gödel’s theorems explained that while the finite can infer something bigger than itself, it cannot prove the infinite. Nature as a whole could only be understood outside of nature because no finite system is sufficient for itself. Gödel demonstrated that within any given branch of mathematics, there would always be some propositions that couldn’t be proven either true or false using the rules and axioms of that mathematical branch itself. You might be able to prove every conceivable statement about numbers within a system by going outside the system in order to come up with new rules an axioms, but by doing so you’ll only create a larger system with its own unprovable statements.

The implication of Gödel’s work is that all logical system of any complexity are, by definition, incomplete. Each of them contains at any given time more true statements than it can possibly prove according to its own defining set of rules. Gödel’s Theorem has been used to argue that a computer can never be as smart as a human being because the extent of its knowledge is limited by a fixed set of axioms whereas people can discover unexpected truths. It plays a part in modern linguistic theories which emphasise the power of language to come up with new ways to express ideas. And it has been taken to imply that you’ll never entirely understand yourself since your mind, like any other closed system, can only be sure of what it knows about itself by relying on what it knows about itself. Although this theorem can be stated and proved in a rigorously mathematical way, what it seems to say is that rational thought can never penetrate to the final ultimate truth.

This deduction was occurring at the same time another theory emerged which described the uncertainty of the relation between the position and the momentum of subatomic particles. This relation has profound implications for such fundamental notions as causality and the determination of the future behaviour of an atomic particle. Because of the scientific and philosophical implications of
the seemingly harmless sounding uncertainty relations, physicists speak of an uncertainty principle which is often called more descriptively the ‘principle of indeterminacy.’ Heisenberg, who won the Nobel Prize for his ‘uncertainty theory’ became known as the father of quantum physics, the new physics of the atomic world. However, the consequences of this theory are even more profound. If we accept Heisenberg’s argument that every concept has a meaning only in terms of the experiments used to measure it, we must agree that things that cannot be measured really have no meaning in physics. Thus, the path of a particle has no meaning beyond the precision with which it is observed. But a basic assumption of physics since Newton has been that a ‘real world’ exists independently of us, regardless of whether of we observe it or not. Heisenberg suggested that such concepts as orbits of electrons do not exist in nature unless and until we observe them. We can assume from this that the more we know where we are, the less we know where we are going, and vice versa.

By the 1980s, scientists began to pull back the curtain which veiled our understanding of how quantum dualism worked. It was found that that under certain circumstances subatomic particles such as electrons are able to instantaneously communicate with each other regardless of the distance separating them (one metre or ten billion kilometres). A new theory to explain this (Pilot Wave Theory) says that pairs of particles move about in three dimensional space guided by an ‘invisible’ (or more correctly, undetectable) physical wave which moves along with them. This mind-boggling theory presupposes that all mass exists in a six-dimensional ‘configuration space.’ The problem with this theory is that it violates Einstein’s tenets of speed-of-light limitations. Nobel laureate Gerard ’t Hooft believes that it is more likely there are ‘non-quantum’ mechanical forces are at work at the subatomic level presumably operating from the very beginning of the Big Bang.

These findings, says David Bohm of the University of London, imply that ‘objective’ reality does not exist. ‘Despite its apparent solidity, the universe is at heart a phantasm, a gigantic and splendidly detailed hologram.’ He believes the reason subatomic particles are able to remain in contact with one another regardless of the distance separating them is not because they are sending some sort of mysterious signal back and forth, but because their separateness is an illusion. He explains that at some deeper level of reality such particles are not individual entities, but are actually extensions of the same fundamental something. Bohm proposed that the underlying order of quantum potential is a field consisting of an infinite number of fluctuating waves. The overlapping of these waves generates what appear to us as particles: these constitute the external order. Even such seemingly fundamental concepts as space and time may be merely external manifestations of some ‘nonlocal, deeper implicite order.’ This suggests that at a deeper level of reality, all things in the universe are infinitely interconnected, and that things outside of space and time affect things inside space and time. Pierre Simon Laplace (1749-1827), a well-known French physicist, once wrote about physical laws that ‘the simplicity of nature is not to be measured by that of our conceptions. Infinitely varied in its effects, nature is simple only in its causes and its economy consists in producing a great number of phenomena, often very complicated, by means of a small number of general laws.’

Alongside the deep philosophical questions by the western world was the Oriental persistence in believing not in a god but in an afterlife, thus avoiding the pitfalls of existentialism and the blind faith of theistic philosophies. Many cultures have independently developed an alternative model of belief in life after death. The concept of transmigration of souls (reincarnation) is no more beneficial or morally assertive than the previous model, although it does have a moral benefit to nonhuman animals. Reincarnation is observed in many non-Judeo-Christian religions; including Hinduism, Buddhism, Jainism, Sikhism and Taoism, and can be found in such geographically, historically, and culturally diverse groups as various African tribes, American Indians, pre-Columbian cultures, the Polynesian Kahunas, practitioners of the Brazilian Umbanda, the Gauls, and the Druids. Intimate with a belief in reincarnation is the notion that all sentient life is sacred.

Only the definition of what is and what isn’t sentient delineates different animals perceived rights based on human religions. Buddhism, for example, prescribes to humans and animals an equal spiritual ‘essence’ (anatma) which at death is transferred from the dead person to another recently-conceived human or animal. Thus, perceiving that all humans have the potential for reincarnating as an animal in the next life, Buddhists prescribe to all sentient life (i.e all animals from bacteria up) a right to life and respect. The Nobel-laureate writer Herman Hesse perhaps sums up the importance of religion by saying:

‘Mankind has a meaning - that human need and human searching at all times and throughout the
whole world are unity. It is unimportant from this point of view whether we regard, as many do today, the religious-philosophical expression of human thinking and experience as something outmoded, an exercise of an epoch now outdated. It does not matter to me if what I am calling here ‘theology’ is transient, a product of one stage of human development that some day will be superseded and left behind. Art too and even speech are perhaps means of communication that are appropriate only to certain states in human history and they also may become obsolescent and replaceable. But at each stage nothing will be so important to men, it seems to me, in their search for the truth, nothing will be so valuable and comforting as the realisation that beneath the division of race, colour, language and culture there lies a unity that there are not various peoples and minds but one humanity, only one spirit.’

Neither science nor religion appear to budge from their beliefs, which perhaps is most admirable of all traits. An adherence to faith exceeds logic. It exceeds even death. What then is there in death that can help explain what life is about? Perhaps Socrates was close to the truth when he postulated that;

‘Death is either one of two things. Either it is annihilation, and the dead have no consciousness of anything; or, as we are told, it is really a change: a migration of the soul from this place to another.’

Blind gods and lame dogs

‘Science without religion is lame.
Religion without science is blind.’

Albert Einstein

Many people are obsessed with trying to define the divine for themselves rather than accept the teachings of the Bible or Darwin. Is it simply a disbelief in what they are taught, or a genuine desire to have first-hand experience with the sublime? Is this urge for spiritual ‘ecstasy’ beyond the limitations of science or religion? Is it why new religions continue to emerge as quickly as new versions of evolution? Why did seventeenth century humans place more faith in what they were taught than twenty-first century humans? Advances in education and knowledge over the last one hundred years has removed many ignorant teachings from biblical and scientific texts, but it is conjecture that no book could replace first-hand experience. Maybe it is better to bask in bliss than to study scripture? Or to split an atom than to just photograph one. But where or how do we find this bliss? Is it a state of mind, or of mindlessness? A freak momentary happenstance that comes unheralded and departs as quickly, or is it something sustainable like permaculture? Does it exist at all?

We have to either believe that human life originated in the bottom of a pond billions of years ago or else it erupted spontaneously from the breath of God. Can we believe in evolution yet still see the ‘beauty’ in nature. Is what we perceive as an ordered sophistication and complexity (an artistic appearance) in life, DNA, atoms, snowflakes and art are mere chance occurrences? Does God play dice, to quote Einstein? If both beliefs systems (i.e. God, and evolution, e.g. a dog) are so diametrically opposed, could both be right? Most of the universe functions on a binary code – yes/no, off/on, zero/one - from genes to gorillas and galaxies. Why things appear complex is due to a linear progression of binary choices based on frequency (pulse frequency modulation). It is like comparing AM and FM radios. Over short distances, AM radios equal FM radios in quality and reproducibility, but over longer distances, AM signals begin to rapidly degrade. Darwinian evolution has ensured that digital rather than analog methods of message transfer (i.e. genetic codes) occurs in digital (codon) frequency modulated forms. As Richard Dawkins states in River Out Of Eden:

‘The machine code of genes is uncannily computer-like. This has dealt the final, killing blow to vitalism – the belief that living material is distinct from nonliving material’

The laws of mathematics which define all universal action has been progressively discovered by Pythagoras, Democritus, Newton, Gödel, Einstein and many others. The numbers that we ascribe to how the universe operates we call real numbers. When we use real numbers to represent the universe, we are incorporating into our mathematics what has proved to be an unwarranted assumption, that of continuity in the coordinates of the Universe. In maths, a unreal system of numbers called complex numbers is used. These complex numbers have no significance as far the reality is concerned, but while analysing problems, we start with real numbers, use complex numbers as a tool and finally get the answer in terms of real numbers. It is conjectured that this is how the universe might really work, where
systems have results that cannot be defined in normal ways without the use of complex or unreal alternatives.

Though we consider ourselves uniquely individual, we still follow fashions, buy the latest model car that is advertised, become victims to commercial philosophies. We are told to invest for a secure retirement even though two thirds of the world's population are starving, we buy technology stocks in a bull market, and suffer rage when we can't buy the house we want even when many people are struggling to pay their rent. Collectively, we are more predictable than we think. It has been determined that the actions of society in general follow fairly predictable mathematical laws. These laws apply as closely to stock-market rises and falls as they do to the inherent fractal shapes of snowflakes.

The numbers behind all these patterns from global economies to snowflake designs were first defined by Ralph Elliott during the Great Depression. Using what are now known as Elliott Waves, he could accurately predict the movement of financial markets immediately post-depression. Since then, various other tools and formulas have expanded on this basic paradigm of mathematical pre-determination, including Bayesian theorems, power laws, hidden Markov processes and cellular automata. Elliott Waves predict that the cycles of business ebb and flow originate not from within the financial market itself but are a product of the humans who drive these markets. Casti recently remarked that:

‘Human emotions are rhythmical; they move in waves of a definite number and direction. The phenomenon occurs in all human activities, be it business, politics, or the pursuit of pleasure.’

Elliott waves apply not only to financial markets but also to examine computations from ECG and EEG rates, disease outbreaks, to predicting frequency of epileptic seizures, bipolar mood swings and Tourette’s tics. Elliott waves are also used to predict fashion trends, spiral patterns found on sea shells, the intricate detail of DNA helix and the number of spirals on a pine cone and sunflower seed head. These patterns reveal a direct relationship between nature’s numbers and all of human behaviour, ranging from newspaper sales figures to the fortunes of national leaders. The reason Elliott Waves can tell us this is simply because they are a direct reflection of human psychology - the rhythms of human emotions – and consequently, our impression of acting with free will.

If we think that waves and natural events are not co-dependent, let us remember that during the 1840 and 1850s, the British embryologist and histologist Martin Barry (1802-1855) propounded a bold and original thesis about the microscopic structure of animal and vegetable tissue. He maintained that minute double spirals (double helixes) were virtually ubiquitous in the makeup of a wide range of biological structures, but because of lack of sufficient evidence, the general scientific community dismissed his theories as improbable and highly speculative. It was only after Watson and Crick elucidated DNA’s helical structure that Barry’s theories were reconsidered as possible explanations for many natural microscopic structures. Similarly, Elliott’s bold statement of mathematical determinism rocked the then known paradigm of a God-regulated universe. Elliott remarked in his book The Wave Principle that:

‘No truth meets more general acceptance than that the universe is ruled by law. Without law, it is self-evident there would be chaos, and where chaos is, nothing is. Very extensive research in connection with human activities indicates that practically all developments which result from our social-economic processes following a law that causes them to repeat themselves in similar and constantly recurring serials of waves or impulses of definite number and pattern. The stock market illustrates the wave impulse common to social-economic activity. It has its law, just as is true of other things throughout the universe.’

Elliott waves threw in question the dogma that events shape social moods, whereas in fact it appears to be the opposite. Social moods themselves follow predictable patterns and trends and shape social events. If this is true, it certainly cannot be the result of external events, as these are unpredictable and don’t follow natural trends. A study of history clearly indicates that humankind has progressed over time in a series of up and down periods (waves). The story of human development is certainly not an unbroken upward movement. There have been many regressive periods that have interrupted the upward path. There is every reason to believe that future events will repeat and confirm this type of up and down movement in human development.

During the Soviet period 1917-1991, Russian psychologists laboured to create a psychology which would concur with communist ideologies. Some of their early prescriptions, in particular those
put forward by Konstantin N. Kornilov in the 1920s and early 1930s, are identical to strategies being advanced by contemporary American psychologists who propose that chaos theory and nonlinear meta-modeling techniques can be designed for research capable of dealing with the complexities, nonlinearities, self-organisational processes, and abrupt transformations characteristic of psychology. Many achievements in medicine have come from applying linear theory to problems. Most current methods of data analysis use linear models, which are based on proportionality between two variables and/or relationships described by linear differential equations. However, nonlinear behaviour commonly occurs within human systems due to their complex dynamic nature. Nonlinear thinking has grown among physiologists and physicians over the past century, and non-linear system theories are beginning to be applied to assist in interpreting, explaining, and predicting biological phenomena. Chaos theory describes elements manifesting behaviour that is extremely sensitive to initial conditions, does not repeat itself and yet is deterministic. Complexity theory goes one step beyond chaos and is attempting to explain complex behaviour that emerges within dynamic nonlinear systems. Nonlinear modeling, though unable to explain all of the complexity present in human systems, is helping to explain some system behaviours that linear systems cannot and thus will augment our understanding of the nature of complex dynamic systems in health and in disease states. It is also thought that a major function of consciousness may be to transform the nonlinear, irrational and difficult to predict dynamics of chaotic nature into the more linear, rational and predictable psychodynamics that make human experience and social life possible.

A question which Chaos theory asks is whether ‘free will’ is more a matter of free ‘choice’ rather than free ‘fate.’ Chaos theory also questions whether choice is in fact predetermined by prior choices? Do we really question how freely we think? Is there nothing to do but accept predetermined events? Albert Camus remarked pessimistically that there is only one serious question, and that is suicide. Shakespeare’s Hamlet agrees that ‘to be or not to be’ is the question. Even Buddhists agree that the only way to enlightenment is by destroying the ego. Is life or death our only choice? Chaos theory, not God, seems to have corrupted the argument for free will. What remains is the element of free choice, which being determined by a person’s past experiences and past choices, can be mathematically predicted. Free choice then might not be about controlling what happens to us, but whether we choose to accept responsibility for these experiences and attempt to ‘transform’ them. Thus, transformation may be our only choice.

The German playwright Friedrich von Schiller wrote, ‘there’s no such thing as chance; and what to us seems merest accident, springs from the deepest source of destiny.’ Heraclitus determined that ‘a man’s character is his fate.’ Shakespeare pursued this idea further in Julius Caesar when he said, ‘Men at some time are masters of their fates: The fault, dear Brutus, is not in the stars, but in ourselves.’ So there are two extreme views about fate, that either our fate is entirely predetermined (Christian) or we determine it ourselves (Eastern). As in most things in life, a ‘middle way’ might be the best. Fully exploiting the relative powers of choice and destiny requires that we ‘hold the tension of the opposites’, as Jung pointed out. In this dialect, we hold both to be true and in the psychological resolution of this conflict, we allow for the emergence of an unforeseen third reconciling truth. For example we could say ‘I have no control over my life’ and then hold the opposite opinion ‘I have total control over my life.’ In believing both to be true, we arrive at a more likely truth that ‘I have total control over some things and no control over others in my life.’ There is always truth found in paradox. Jung believed it to be the only way of expressing the inexpressible; apprehending something only by experiencing it. Jung postulated that on a psychological level the union of opposites cannot be achieved by the conscious ego alone – by reason, analysis – that separates and divides; nor even by the unconscious alone – that unites; it needs a third element, the transcendent function. Alchemy, the ancient art of turning base metals into gold (as a spiritual exercise) use a classic example of paradox as a transcendent function to stop the mind from asking questions and to force it to begin asking answers.

‘Know that I have only one such son; he is one of seven, and the first among them; and though he is now all things, he was at first only one. In him are the four elements, yet he is not an element. He is a spirit, yet he has a body; a man, yet he performs a woman’s part; a boy, yet he bears a man’s weapons; a beast, yet he has the wings of a bird. He is poison, yet he cures leprosy; life, yet he kills all things; a King, yet another occupies his throne; he flees from the fire, yet fire is taken from him; he is water, yet does not wet the hands; he is earth, yet is sown; he is air and lives by water.'
The mind struggles for answers, and only at its end-point does it begin to grasp the ineffable which sometimes is beyond logical analysis; perception rather than deduction.

**Our common beliefs**

*Like the sword that cuts, but cannot cut itself;
Like an eye that sees, but cannot see itself.*

*Zen saying*

The misuse of religion often leads to violence. However, religion is also being used positively. Religious leaders have proclaimed the value of peace, sought to ease the injustice that is the source of conflict, and endeavoured to resolve conflicts based on religion. In recent years, the changing international environment has made room for religiously-motivated individuals to influence events and stimulate interest in the positive role that religion can play. Kofi Annan, Secretary General of the United Nations is more cautious of religion’s role in secular matters:

‘Religion, sadly, has been misused throughout history in the cause of division, discrimination and even death. From antiquity through the Crusades to the present day, religion has been distorted, turned from a personal matter of faith and sustenance into a weapon of power and coercion. The cry of the soul for meaning, and for God, has been drowned out by the battle cry of those claiming to have God on their side.’

The idea has been growing among astronomers and cosmologists that the universe has a purpose, that it is extremely fine-tuned and ordered in such a non-chance way, as if the universe was intending, from the very beginning to allow sentient life to develop. This leads many to the inevitable conclusion that life is, has and will always be pre-ordained to happen. Whether it did or not is irrelevant to the argument that once life begins, it is self-sustaining through a matrix which operates through the effects of universal laws of physics that operate at the atomic and molecular level. If the cell has the right nutrients around it, it has no other choice but to live, grow and reproduce. It adapts to its new environment. Whether life began here on Earth seven billion years ago, or on some other planet at some other time does not detract from the fact that life does happen. It is pre-ordained by laws of chemistry and physics.

At the intersection point, where self and others in society meet, we honour the needs and talents of our personal selves; we connect lovingly with others, and we experience ourselves earning our way in the world and contributing to the society in which we live. In such experiences, and with such life choices, we are likely to experience fully the meaning of life and to be able to express the fullness of that meaning in our relationships and our work.

It helps to recognise that there is an inherent ambiguity about life. Seeing this not as a problem but as a potential to develop an attitude of ‘metaphysical revolt’ has shown to free doctors to form relationships with patients who are complex subjects rather than objects to be treated. This notion of ambiguity of existence has been discussed by many philosophers including Nobel Laureate Albert Camus in his book *Myth of Sisyphus*, where he compares the awake passions of Don Juan and the maniacal (and fatal) love of Romeo and Juliet. The recognition of the intrinsic ambiguity of existence coupled with an attitude of metaphysical revolt allows doctors and patients to liberate themselves from external frameworks (legal bureaucracy) that limit experience, impose meaning, and in the process, sever human relationships.

Certainly there are many secrets unfolding by the relentless search by science, but as for the meaning of life, it must certainly end by our deciding to finding meaning in our life rather than meaning of life. Victor Frankl endured the Jewish concentration camps during WWII and wrote in a book *Man’s Search for Meaning*, which described methods that people used to endure the terrors of torture, starvation and imminent death.

‘Ultimately, man should not ask what the meaning of his life is, but rather must recognise that it is he who is asked. In a word, each man is questioned by life; and he can only answer to life by answering for his own life; to life he can only respond by being responsible.’

To this, we could add the words of the Indian pandit, Shantideva, who summed up the way to ultimate happiness by saying that ‘all of life’s suffering arises from thoughts of self, and all of life’s pleasures arise from thinking of others.’
Part 2

Ethics

‘There are circumstances in which, even in democracy, it is morally right to disobey the law, and the issue of animal liberation provides good examples of such circumstances.’

Peter Singer, Animal Liberation
Part 2

Ethics

‘Just as in my own will-to-live there is a yearning for more life, and for that mysterious exaltation of the will which is called pleasure, and terror in face of annihilation and that injury to the will to live which is called pain; so the same obtains in all the will-to-live around me, equally whether it can express itself to my comprehension or whether it remains unvoiced. Ethics thus consists in this, that I experience the necessity of practising the same reverence for life toward all will-to-live, as toward my own. Therein, I have already the needed fundamental principle of morality. It is good to maintain and cherish life; it is evil to destroy and to check life.’

Albert Schweitzer, Civilisation and Ethics

Definitions:
- Morality: principles relating to right and wrong; ‘the golden rule’ doing as you would be done by
- Ethics: behaviour relating to morality.
- Sentience: self-awareness of sensations and feelings, without mental perception
- Intelligence: to perceive meaning; ability to choose, deduce or discern

The fundamental difference between animals and humans is the cerebral cortex. Our ability to rationalise, intellectualise and abstract make us unique as a species. That is not to say that other animals are unable to do so, but that humans abilities at these skills are far and beyond any other species capabilities. When an animal feels pain, they respond with anger, fear or depression. Humans on the other hand are able to give this pain meaning through art, music, poetry and story-telling. When animals are confronted with a problem, they have only limited responses available. When humans have a problem, they can modify their environment, invent complex tools and seek novel solutions that are denied most other animals.

When society has a problem with people, they turn to politicians for help. When society has a problem with animals, they turn to veterinarians for advice. We are the custodians of animal’s welfare. We implement society’s laws for the ethical treatment of animals, ensuring they are kept disease-free, housed humanely and, where necessary, killed painlessly. That animals outnumber humans on this planet ten to one does not make it a daunting problem. Since animals cannot vote, form unions, institute sanctions, go on strike or revolt, they cannot question our human assertions of what is right or wrong for them. As we shall see in this chapter, all animals are equal under the law, but as George Orwell once wrote in Animal Farm, some are more equal than others.

If human society was a utopia, oppression of individuals and races, or persecution of religious and minority groups would not occur. Against this backdrop of human disagreements, we cannot expect animal rights to be immune to partiality. Laws alone cannot prevent discrimination or segregation or abuse of humans. All we can do is police those laws, make punitive actions against the transgressors and compensate the victims. Many animal-rights activists argue that in the same vein that Germany repaid the Jews and Allies in war retribution, humans will one day have to compensate all the animals who are presently subjugated, experimented on, enslaved and disenfranchised by us. I hope this day never comes, for it would bankrupt not only our economy but also our most basic Christian tenet that humans are given ‘dominion over the fish of the sea, the birds of the air, over every living thing that moves upon the earth.’ World banks would crumble, stock markets would plummet and there’d be a rain of bodies plunging from wall street offices. Somewhere between a utopia of ‘animals roaming...
free’ and feeding the starving nations of the world, we can find a point of compromise. The word ‘dominion’ was actually a translation of the Hebrew word ‘stewardship’ and I think this may be a word given to more responsibility on animal’s behalf; of minimising harm to them while using them for keeping humans alive and healthy.

**Animal rights**

“If emotion without reason is blind, then reason without emotion is impotent.”

Peter Singer

Animals don’t talk much. When they do complain about something it is, in human terms, a fairly limited repertoire. They can growl, bark, hiss, snarl, bite, scratch or kick. In our arrogance, we’d never expect an animal to jump up onto a dinner table unless we were absolutely certain it could hold its own in a conversation. What is clear about animal communication is that we can never understand it by simply waiting for a book on animal grammar to appear. There will never be a universal translator that’s going to appear magically out of nowhere. Only by lowering our eyes and ears to their level can we begin to decipher what animals are trying to communicate. At the ground level, from an animal’s eye-view of the world, their languages have a lexicon that runs to as many pages as any Collins dictionary.

Our observation of animals as objects of study undoubtedly began in prehistoric times. The first recorded attempt involving the use of live animals for research was by Ersistratis in Alexandria in 300BC. Since then, animal experimentation was undertaken ad hoc, unrestricted by legal considerations until the last century. Recent surveys suggest that the majority of the public is willing to accept the use of animals in research if high standards of welfare and effective regulation are in place. The use of animals for research and teaching has now become an issue of great concern in the United States. In contrast to the legislative systems in Britain, Scandinavia and many European countries, American scientists can pursue research projects with relative freedom. Recent activities in the United States may effect this practice and future animal experimentation may be subject to restriction and control by legislation. Events leading to this possibility are similar in many ways to those in 19th century Britain prior to the passage of the Cruelty to Animals Act in 1876 (which licensed scientists, regulated experimentation and carried out inspections). The immediate effect of this act was to decrease the number of scientists who could conduct experiments on live vertebrate animals in Great Britain and hence the number of experiments and animals. Yet, antivivisection activity in Britain did not decrease but continued toward its goal of abolishing all research with animals. By 1882, the medical scientific community established the Association for the Advancement of Medicine by Research, which began to advise the Home Secretary on licensing scientists. Although the first Humane Society was established in 1866 in the United States, it was not until the end of the nineteenth century (when scientific disciplines were necessary for the education of physicians) that protests against the use of animals for experimentation became organised.

Legislation in Britain, Scandinavia and in many European countries appears to be efficient and effective because of the relatively small number of research institutions and scientists in those countries. American scientists are facing three possibilities: mandatory regulation (legislation), self-regulation, or some combination of both. Self-regulation of animal experimentation appears to be the optimal choice. It would reflect the success of animal protection groups in raising the consciousness and concerns of scientists about the humane treatment of experimental animals. It would also reduce the numbers of animals used for experimentation, any unnecessary duplication of experiments, and minimise pain and distress. Although scientists are proceeding toward programs of self-regulation, this scientific approach will not entirely satisfy the animal protection groups. Scientists are concerned with the moral and ethical responsibility for the humane treatment of animals in experimentation, whereas animal protection groups believe that animals have a right to a comfortable life, which does not only mean an absence of pain but also a positive social milieu.

When you examine the issue of right to life, it appears self-evident that there is considerable plasticity when it comes to morality between humans and animals. In most countries, it is legal to kill an animal for food, providing the animal is humanely killed. Yet in most western societies, it is illegal to kill a domestic pet for food (such as a cat or dog) as these are afforded a different status to domestic cattle, pigs and sheep which are reared specifically for food production. In Asian traditions however, consuming cats, dogs and other pets is morally satisfactory because of an inherent cultural perspective. What is legal to consume therefore depends on our point of reference culturally or geographically. If we
argue that how we treat animals and humans is derived from the value of their lives (which is a function of the quality of their lives, which in turn is a function of the richness of their lives) we would have to therefore argue that humans with a low quality of life should be chosen as experimental subjects over animals with a higher quality of life\textsuperscript{42}. Yet it is hard to imagine such moral arguments being exerted. Such morality would be nothing short of immorality.

What is also interesting is that gender appears to affect the moral argument as well. For example, women were more likely than men to support tenets of the animal protection movement\textsuperscript{43}. Likewise, women were more likely than men to favour increased restrictions on animal use and are more concerned than men about the suffering of research animals. Women are more likely to make personal sacrifices such as giving up meat and medical benefits in an effort to protect animals and more likely than men to question the use of animals in research on scientific grounds. Men, on the other hand, tended to emphasise the potential benefits arising from the use of animals in research.

An estimated eight billion animals in the United States are born, confined, biologically manipulated, transported and ultimately slaughtered each year so that humans can consume them\textsuperscript{44}. To do this, society assumes moral superiority over animals to justify such consumption. Such moral superiority permeates our philosophy, religion, science, and popular culture. We give ourselves as a species special cognitive property such as self-consciousness, which confers our unique moral standing. However, cognitive properties per se do not confer moral standing, and metaphysical personhood is not sufficient for either moral personhood or moral standing.

It is generally assumed that animals lack a relevant form of self-consciousness or its functional equivalent. But, if animals aren’t candidates for moral ‘personhood,’ some humans (such as infants and the intellectually disabled) may also fail to qualify, since they lack one or more of the conditions of moral personhood. Thus, if moral personhood were the sole basis of moral rights, then these humans would lack rights and precisely for the reasons that nonhuman animals would. The application of the ‘golden rule’ (do unto others) seems more applicable than arguing over notions of personhood. For example, Matavira, the founder of Jainism, has summed up a balance between humanism and sentiment for less rational living creatures as: ‘A man should wonder about treating all creatures as he himself would be treated’\textsuperscript{45}.

One aspect which is offered to substantiate an individual’s moral identity is to question their ability for self-awareness over time. That is, is the entity capable of self-comprehension about what it did yesterday and what it will do tomorrow? Certainly behaviourists will confirm that memory abilities in animals, though varying between species, is considerable. We only have to observe the migrational habits of geese, who cross thousands of kilometres each year to the same nesting grounds to confirm this. Also the migratory habits of seals, penguins, moose, deer, the spawning habits of salmon. The list is seemingly endless. This behaviour not only suggests an instinctual motivation to their migratory behaviour but also implies a profound knowledge of temporal mechanics (space and time); knowing about seasonal fluctuations in rainfall, temperature and pressure gradients, conceptualisation of ‘past, present and future’, and spatial geography. One could say there is an existence to their life over time; of having not only a \textit{biological} but also a \textit{biographical} life.

Another aspect of animal rights to consider regards the Aristotelian notion of ‘potential’. If, for an example, an embryo has the potential for human life, it should be respected. Aristotelian potentiality refers not to something (or someone) in the future, but to the inherent structure in the present. For example, the embryo can be viewed as a being already possessing the human nature and actively developing its potential for personhood\textsuperscript{46}. Using this logic, we could say that human nature is not static and predetermined, but rather as a principle of ‘becoming.’ However, Aristotelian potential could be manipulated by saying that animals have an \textit{evolutionary} potential for ‘becoming human.’ Were this true, a direct argument for moral and legal equality of nonhuman animals and humans would be incontrovertible.

Animal cloning is a new line of research that promises enormous clinical benefits to humans. Together with this emerging specialty, specific animal rights have evolved on the subject of cloning. Although novel in concept, ‘the principle of axiological anthropocentrism’ (PAA), do not significantly affect the ethical rights of cloned animals compared to non-cloned animals. They still determine that
humans have pre-eminent moral significance. The best-known animal rights views (those of Singer and Regan) are consistent with the PAA, which denies cloned animals any 'potential' characteristics having ethical difference to non-cloned animals.  

Animal Ethics

The rights and welfare of animals is a fundamental tenet of our profession. It is anathema to the public eye that a veterinarian would be ignorant or neglectful of animal welfare issues. Yet veterinarians are humans first and professionals second. An individual’s outlook on life varies widely from disinterest of animal welfare to passionate support. Whether they are a veterinarian or not does preclude having issues about what rights we afford an animal. Some veterinarians are pro-welfare activists while others work in research laboratories where thousands of animals are used annually for experiments. The rights of an animal is affected by whether it is classified as a domestic pet or production animals. Therefore, the use of the animal (e.g. pet, work, food production or research) dictates its legal status. Although the use of animals in research and teaching are under constant scrutiny and the laws regulating their use clearly spelt out, their life is far different from that of a domestic pet. For example, a companion cat may receive the best veterinary attention to prolong its life, yet another cat living in a research cattery is subject to terminal surgical or medical experimentation. Here is a case of two individuals of the same species having different legal rights.

The British philosopher and activist Jeremy Bentham wrote in 1781 about animal rights:

‘The day has been, I grieve it to say in many places it is not yet past, in which the greater part of the species, under the denomination of slaves, have been treated ... upon the same footing as ... animals are still. The day may come, when the rest of the animal creation may acquire those rights which never could have been withheld from them but by the hand of tyranny. The French have already discovered that the blackness of skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognised, that the number of legs, the thickness of the skin, or the length of the tail, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason, or perhaps, the faculty for discourse? The question is not, ‘Can they reason?’ Nor, ‘Can they talk?’ But ‘Can they suffer?’ Why should the law refuse its protection to any sensitive being? The time will come when humanity will extend its mantle over everything which breathes...’

Contemporary philosophers such as Peter Singer suggest that any animal is capable of suffering, and therefore deserves moral rights. In his book *Writings on an Ethical Life*, Singer says that ethics comes down to four basic assumptions:

1. Pain is bad, no matter what species suffers this pain
2. Humans are not the only species capable of feeling pain or of suffering
3. When we consider how serious it is to take life, we should consider not the race, breed or species (including human) but at its own desires about continuing to live or the kind of life it is capable of living.
4. We are responsible not only for what we do but for what we could have prevented. Knowing that we could intervene in other’s suffering (including an animal) and not doing so is unethical.

Nearly all the external signs that lead us to infer pain in other humans can be seen in all other species of mammals and birds. The behavioural signs include writhing, facial contortions, moaning, yelping or other forms of calling, attempts to avoid the source of the pain, appearance of fear at the prospect of its repetition, and so on. In addition, we know that these animals have nervous systems very like ours, which respond physiologically like ours do when the animal is in circumstances in which we would feel pain: an initial rise of blood pressure, dilated pupils, perspiration, an increased pulse rate, and, if the stimulus continues, a fall in blood pressure. Although human beings have a more developed cerebral cortex than other animals, this part of the brain is concerned with thinking functions rather than with basic impulses, emotions, and feelings. Peter Singer in *Animal Liberation* describes how:

’We also know that the nervous systems of other animals were not artificially constructed - as a robot might be artificially constructed - to mimic the pain behaviour of humans. The nervous systems of animals evolved as our own did, and in fact the evolutionary history of human beings
and other animals, especially mammals, did not diverge until the central features of our nervous systems were already in existence. A capacity to feel pain obviously enhances a species’ prospects for survival, since it causes members of the species to avoid sources of injury. It is surely unreasonable to suppose that nervous systems that are virtually identical physiologically, have a common origin and a common evolutionary function, and result in similar forms of behaviour in similar circumstances should actually operate in an entirely different manner on the level of subjective feelings...’

Any being that has an interest in not suffering deserves to have that interest taken into account. And any animal who acts to avoid pain can be thought to have just such an interest. Richard Serjeant in The Spectrum of Pain insists that any argument which says that animals feel less because they are lower animals is an absurdity; it can easily be shown that many of their senses are far more acute that ours - visual acuity in certain birds, hearing in most wild animals, and touch in others; these animals depend more than we do today on the sharpest possible awareness of a hostile environment. Apart from the complexity of the cerebral cortex (which does not directly perceive pain) their nervous systems are almost identical to humans and their reactions to pain remarkably similar, though lacking (so far as we know) the philosophical and moral overtones. The emotional element is all too evident, mainly in the form of fear and anger.

Singer once remarked that ‘the basic principle of equality does not require equal or identical treatment; it requires equal consideration. Equal consideration for different beings may lead to different treatment and different rights.’ He explains that since dogs cannot vote, it is meaningless to give them such rights. Likewise, since men cannot have an abortion, it is meaningless to give them this right. What is important with giving animals rights is to ensure that their basic rights to life; namely, food, companionship, and a stress-free and pain-free lifestyle is the first requirement. Such a basic right is ignored for many factory and feed-lot animals. The principle of equality must be applied across the species (including humans). Thomas Jefferson, who wrote the American Declaration of independence, opposed slavery for this reason, even though he was unable to free himself from keeping slaves.

‘Be assured that no person living wishes more sincerely than I do, to see a complete refutation of the doubts I myself have entertained and expressed on the grade of understanding allotted to them by nature, and to find that they are on a par with ourselves... but whatever be their degree of talent it is no measure of their rights. Because Sir Isaac Newton was superior to others in understanding, he was not therefore lord of the property or persons of others.’

Instincts and immorality

‘I think I could turn and live with animals, they are so placid and self-contained, I stand and look at them long and long, They do not sweat and whine about their condition, They do not lie awake in the dark and weep for their sins, They do not make me sick discussing their duty to God, Not one is dissatisfied, not one is demented with the mania of owning things, Not one kneels to another, nor to his kind that lived thousands of years ago, Not one is respectable or unhappy over the whole earth.’

Walt Whitman, Leaves of Grass

The argument that an animal is immoral because it kills another animal for food is what maintains human moral superiority. Many animals have the ability to engage in intentional behaviour which requires some degree of abstract thinking. Certain animal behaviour, such as altruism, is certainly as equally consistent with the explanation that at least some animals engage in evaluative or normative-type cognition as with any other competing explanation. But the fact that an animal may be capable of abstract thought and even of some sort of mental behaviour that may be described as evaluative or normative does not mean that animals act ‘immorally’.

To say that someone has acted ‘immorally’ suggests that they have ‘intentionally’ violated a moral rule. But animals cannot intentionally violate a moral rule any more than can a young child. In most legal systems, there is a minimum age for criminal liability that is generally at the very least five years old. Similarly, some adults are, for reasons of organic or psychological impairment, similarly unable to conform their conduct to rule standards. The fact that some humans may not be able to
conform their conduct to rule standards, or that animals cannot do so, does not mean that humans who ‘can’ choose to follow moral rules are thereby not obligated to do so. Put simply, the fact that some animals kill other animals is absolutely irrelevant to the matter of the obligation of those humans who can make moral decisions.

The ethical code

It was not until the end of the twentieth century that legal process finally made defunct the notion of humans as a master race. By law, we do not consider that there is an inferior race of humans who are subject to experimentation for the benefit of others. We believe that superior knowledge, technology or economy are insufficient to justify exploiting any human over another. What restrains us from human experimentation (and here I ignore the aberrations of desots and Nazi dictators) is clearly a moral/ethical code founded in law. This moral code stems from a fundamental belief in social cohesion brought about from centuries of religious, philosophical, legal, scientific and social reformation. There is however, a paradigm shift from thinking all humans equals to thinking all animals (including humans) equal. The dichotomy between humans being separate from nature and humans being interconnected with Nature is what forms the basis of our entire moral and ethical treatment of animals and nature. It also forms the basis of most religions. Only recently has our natural dominance been challenged. The postulates of Galilean heliocentricity, Darwinian evolution, quantum mechanics and chaos theory have reduced human’s prominence in the universe to relative obscurity. Even doctors, once hallowed as God-like creatures, have begun to accept that the patient often times knows best.

The presence or absence of pain/stress does not solely measure animal welfare. Other factors such as whether the animal’s environment is stable or changing are important. Studies in various species confirm that a stable environment is far less stressful than a changing one. An animal’s ability to cope with changes also influences behavioural and physiological responses including fitness, growth rate, reproductive performance, injury and immunology.

The ethics which are pertinent to veterinary care are based on five morally relevant criteria; facts, concepts, moral virtues and vices, duty of care and supererogation (doing more than duty requires).

- **Facts** - these are the essential data on the case, devoid of any emotional or personal bias. Who are the stakeholders (people/animals) involved? While facts tell us what is the case, it cannot tell us what must be done.
- **Concepts** - this involves understanding personal interpretations of the facts by the relevant parties involved.
- **Moral virtues and vices** - recognises that moral integrity varies between individuals. Some people are naturally more aware of moral values than others. Moral virtues (e.g. honesty, integrity, responsibility, courage and fairness) are better than moral vices (e.g. lack of integrity, dishonesty, cowardice, irresponsibility and unfairness). However, asking ‘How would a morally responsible person act in this situation’ does not necessarily help solve an issue.
- **Duty of care** - an assumption is made that to act morally is the ideal, rather than adopting a nihilist attitude (nothing matters). Duty has an assumption that we have to decide between not what is right and what is wrong (never so easy) but what is right and what is more right (i.e what has the greater moral claim on us). From this, five kinds of duty can be distinguished; non-discretionary duties (treating everyone in the same way), discretionary duties (helping special groups, based on personal choice), special duties (duties prescribed by our profession, specifically to alleviating the suffering of animals), duties of justice (duty based on legal and moral rights as asserted by law), and duties of utilities (practical application of helping others to reduce suffering and maximising pleasure).
- **Supererogation** (doing more than duty requires) - based on individual moral effort ‘above and beyond the normal call of duty.’ There are no legal or moral requirements, but such actions are praised by society.

Considering all these matters, we can then decide an appropriate course of action based on moral and ethical choices: What should be done?, What is the right action?, etc. Ethics is primarily concerned with the capacity to suffer by animals, and is clearly a strong argument for establishing moral rights for them. The capacity to suffer (if proven) confers on all animals a right not to suffer.

Nurturing in order to stave off such suffering is the first act of the community toward the
individual, primarily in infancy. Hence autonomy, the gradual growth of self-determination in individuals, is grounded in a broader moral commitment of the community, that of beneficence. The community not only has an obligation to refrain from harming individuals (nonmaleficence), but it also has an active duty to ameliorate and prevent, as far as possible, the suffering of its members. Thus, if there is a social contract, it is one of nurturing one another to overcome the vulnerability of suffering, not primarily one of protecting autonomy. This is most significant for clinical ethics as well. Once the primary obligation to ameliorate suffering is no longer necessary, when the individual loses or does not have the primary moral worth prompted by the capacity to suffer, then secondary and symbolic obligations emerge. Thus, a ‘calculus’ of moral worth emerges. This means that our obligation to individuals in a permanent vegetative state or to anencephalics (where the individual has lost the capacity to suffer through some cerebral event) be balanced against other primary obligations. However, we cannot prove that suffering in animals is the same as in humans. Because of this, the capacity of animals to suffer is still debatable as a universal ethic.

Human morality bases itself on such things as right of life, liberty and freedom to pursue individual endeavours. With respect to humans, it has been said that our needs far outweigh the needs of animals. It seems that legal protection is the only covenant given to animals, however fickle this law may be between states and countries. Pain and suffering, which is the crux behind any moral debate, occurs in all animals. In attempting to bring animals to a level commensurate with that of humans, the President of People for the Ethical Treatment of Animals, Ingrid Newkirk, recently remarked that ‘a rat is a pig is a dog is a boy.’ She takes the extremist’s point of view that even if one mouse dies in research to save an a thousand human live cannot justify that research. But our moral imperative must not paint such a black and white picture of what is moral and what is immoral, only that we should consider the consequences of our actions. To allow an animal to live a relatively long, pain-free and stress-free life and then kill it painlessly for food consumption is morally preferable to having that animal suffer a short, painful and stressful life before death by consumption.

In 1959, William Russell and Rex Burch published The Principles of Humane Experimental Technique in which they say that if animals were to be used in experiments, every effort should be made,

- to ‘replace’ them with non-sentient alternatives
- to ‘reduce’ to a minimum the number of animals used
- to ‘refine’ experiments to minimise pain and distress.

These guiding principles, the ‘3 Rs’ of animal research, have influenced new legislation in many countries including Australia aimed at controlling the use of experimental animals. In the United Kingdom they have become formally incorporated into the Animal (Scientific) Procedures Act. Although aimed at improving animal welfare, it still does not address the issue of whether the research is required in the first place. Nevertheless, adoption of the 3Rs will improve the quality of science. Appropriately designed experiments that minimise variation, provide standardised optimum conditions of animals care and minimise unnecessary stress or pain, often yield more reliable data. One can argue that biomedical experimentation on animals is justifiable because of its enormous benefits to human beings and therefore it is morally insignificant since the benefits of research incalculably outweigh the evils. This defence of animal experimentation is likely to succeed only by rejecting moral presumptions.

Some scientists and animal rights activists argue that even if non-human animals have less moral worth as humans, experimentation is justified only if the benefits are overwhelming. Since this is rarely the case, they propound that researchers cannot substantiate their claims on behalf of animal research since there is currently no acceptable utilitarian defence of animal experimentation. Moreover, it is unlikely that there could be one. Since most apologists of animal experimentation rely on utilitarian justifications of their practice, it could be concluded that on these grounds biomedical experimentation on animals is not morally justified. Take for example the contemporary bioethicist Peter Singer. He approaches the ethics of scientific research on a basis of classifying organisms as either sentient or insentient. Accordingly, any sentient organism requires moral consideration. Anything that lacks cerebral development (e.g. a stone or an eighteen week foetus) is incapable of feeling pain and cannot be classified sentient.

'Sentience is a prerequisite for having interests at all, a condition that must be satisfied before we can speak of interests in any meaningful way. A stone does not have interests because it cannot suffer. Nothing that we can do to it could possibly make any difference to its welfare. If a being is
not capable of suffering, or of experiencing enjoyment or happiness, there is nothing with respect to that being to be taken into account in considering equally the interests of all morally significant beings.

This utilitarian argument avoids the issue of human potentiality, belittles foetus’ capacity to sense pain, and leads Singer to logically justify euthanasia, infanticide and homicide. Logic, per se, can be fraught with errors. However, he does this intellectual experiment to argue a case for avoiding experimental research in animals unless we would do the same for an intellectually-disabled person or foetus. The extreme case, of arguing that all experimentation causes pain to animals and therefore should be banned, is a form of absolutism and ultimately is wrong. The question is ultimately reducible to ‘How much pain can be inflicted on animals in research to provide the minimum pain in humans in terms of disease.’ And when we consider the health improvements of human society over the last two hundred years, ninety five percent of those improvements have not come from scientific research but through the implementation of diet and sanitation measures in homes, and via civil engineering in our cities.

There are research benefits which could never have arisen without the use of animals as experimental models, including Harvey’s work on animal circulation of blood, Banting’s discovery of insulin and the advent of a poliomyelitis vaccine, open-heart surgery and organ-rejection studies, to name a few.

The exploitation of animals for food, research and sport are based primarily on a philosophy of specieism. Only by seeing animals as morally equal to humans, but with simpler rights, especially the right to a pain-free life, can we liberate them the same way we liberated suffragettes and black slaves.

In scientific research on animals, there are three basic moral points-of-view: contractarianism, utilitarianism and deontologism. According to contractarianism, the essential issue is concern for the sentiments of other humans in society on whose co-operation those responsible for research depend. Thus, it is acceptable to use animals as long as most people can see the point of the experiment and not offended by the methods used. According to utilitarianism, the essential ethical issue is about the consequences for humans and animals. Thus, use of animals for research is justified if enough good comes out of it in terms of preventing suffering and creating happiness, and if there is no better alternative. In the deontological approach, the primary duty of beneficent research for humans is weighed against not harming animals and respecting their integrity. By balancing these priorities, the moral problem of animal experimentation exists in finding which duty is the most optimal for humans and animals. These three views, however, all justify animal experimentation to some extent.

According to the argument against animal experimentation, the theory of evolution ‘undermines’ the idea of a special human dignity and supports ‘moral individualism.’ The latter view implies that if it is wrong to use humans in experiments, then it is also wrong to use animals unless there are relevant differences between them that justify a difference in treatment. No such differences are found with respect to animals. The argument in favour of animal experimentation is based on evolutionary psychology. It states that humans, like all social animals, are speciesists by nature and this should be taken seriously in ethical considerations. This does not mean that animal interests should not be considered, only that vital human interests may outweigh them. For pro-animal experimentation, the evolutionary argument in favour of animal experimentation is judged more convincing than the one against.

We are custodians of this planet, and have the power to either sustain or destroy the ecosystems of the planet. Therefore, we have a responsibility for the welfare of all life on this planet. It appears counterproductive to halt all scientific research, for many life-saving advances have been made over the last two hundred years of scientific endeavour. Yet, we must recognise that all animals have a moral right to live in an unrestrained, peaceful and productive environment, and that we do an animal a moral disservice by denying this solely for pecuniary gain. We cannot assume that animals lack the cognitive skills to be aware and/or fear our labs, schools and abattoirs. As a part of the evolutionary web of life, we have a responsibility to ensure no life (animal or human) is lost unnecessarily. We should maintain an impartial respect for life, regardless of the number of legs, colour, or type of skin.

A personal perspective
My most memorable experiences as a new graduate (and here I use the word memorable not in a favourable way) was during a two week locum onboard a live export ship to the Middle East in 1988. After sailing from Fremantle, the ship sailed on a fourteen-day journey through the tropics to Fujairah, where I was destined to disembark. During the journey, I was commissioned to vaccinate seventy odd cattle with live Rinderpest vaccine, as well as monitor the general health of one hundred and twenty thousand sheep. I considered myself relatively experienced and worldly, having been a vet for two years. However, what was to transpire on that journey transformed me. I awoke the first morning of our journey to reports from the handlers that a dozen sheep had collapsed, presumably from heat stroke. After examining the sheep, I confronted the ship’s captain, asking him why there was no basic veterinary medicine on-board the ship. The Captain, a friendly British officer, showed me the vet’s locker which contained a 500 mL bag of saline fluids, a bottle of long acting penicillin and some half empty bottle of vitamin injection. He then looked at me with an all-knowing smile and said ‘We don’t get much use for it out here. You understand that if they get sick, you have to put them down.’ He then handed me a post-mortem knife, patted me on the shoulder and returned to his breakfast.

The following day there were a further ten sick sheep, mainly from stress and dehydration, but three of the cattle which I had vaccinated had also died. After killing the sick sheep and performing autopsies on the dead cattle, I retired to my cabin to contemplate the unfolding drama in solitude. By the end of the two-week journey across the Indian Ocean, I had to kill or had found dead in their pens, over one thousand sheep. At the height of the crisis, I was garrotting one hundred sheep each morning. I was told that this number of deaths was not unusual. I learnt from the Captain that a one to three percent loss of stock during a trip was considered ‘satisfactory.’ On one journey in the early eighties, the Captain informed me of a particularly hot summer when fifty percent of the stock was lost in transit.

By the end of the journey when I passed through customs in Fujairah, I had the sobering thought that I had just killed more animals than I could possibly imagine saving during my future professional life as a vet. I felt moral repugnance with myself for participating directly in the suffering of animals.

My perspective of life onboard a live export ship could be seen as naive. At the time, I was unaware of the religious motivation behind live sheep trade; that Muslims perform sacrifice for religious reasons of offering feast as explained based on the Abrahamian tradition. Normally, two thirds of the slaughtered animal are given to the poor, or else served as meal to guests and relatives. One third is saved for the own family. The Islamic religion, cognisant of animal ethics, acknowledging human responsibility for animals as creatures whose life and well being have to be protected. Nobody is allowed to subject animals to pain, suffering and damage without a sound reason. The ritual slaughter aims at complete debleeding. Muslims believe that blood is a symbol life and soul and the breath of life. Therefore, it must leave the body completely before consumption. No Muslim is allowed to eat live animals. Electric stunning is allowed if the animal is unconscious and not dead. The consumption of animals not killed according to custom is forbidden to be consumed by the traditional Muslim religion.

Some shipments of Australian sheep to Saudi Arabia are specifically for the Hajj festival where sheep are sacrificed by the Halal slaughter method. Although the Koran is very specific about Moslems treating animals well, this is largely ignored. One reporter recently pointed out that the sheep are;

‘trucked hundreds of kilometres through the searing 50°C desert heat. It’s the pilgrim’s duty to make a ritual sacrifice by cutting the sheep’s throat - the other sheep see everything going on in front of them and stand huddled in a state of shock.’

The ritually-sacrificed animals bleed to death. Research has shown that unconsciousness can take between 10 and 30 seconds to occur. Although Muslim law allows the slaughter of sheep by hand, this method cannot be painless to the animal.

**Speciesism**

*Most humans are speciesist in order to promote the most trivial interests of our own species.*

*Peter Singer*

The word ‘speciesism’ was first coined by Oxford psychologist Richard Ryder in the 1970s, and popularised by Dr Peter Singer in *Animal Liberation*. In the written and spoken words of English, gender-neutral and racial-neutral conversation is now politically correct, yet species-neutral words are rarely used. We cannot write ‘him’ or ‘he’ when we are discussing a neutral topic, and must always use
the words ‘they’, ‘them’ or ‘he/she.’ Similarly, ‘indigenous’ and ‘African-American’ people has replaced
the use of words such as ‘Aborigine’ or ‘Negro.’ However, it is rare to discuss animals in such politically
neutral ways. We still use species derogatory terms such as ‘introduced’ and ‘feral’ species, vermin, etc -
all emotion-charged denominations. Although this may appear trivial, it underlines the psychology of
devaluation, where an individual’s value is demeaned by negative labelling in order to achieve ulterior
group goals which might conflict with individual moral sentiments. Few of us are immune to
speciesism; that it to say a love of one type of animal over another. Many vets I know have their
favourite pet dog or cat, but very few have remorse for eradicating rodents under their house. The
machinations we apply to our conscience regarding speciesism is to first devalue them as ‘rodents’,
laboratory animals, etc, in the same way that we have dehumanise ‘Coloureds’, Jews, ‘degenerates’, etc,
in human history. We prioritize the importance of certain species over others. Dogs are said to be
superior to rats. Yet, in the past Negroes were considered mentally inferior to Anglo-Saxons. We say
that dolphins are more evolved genetically than fish, and even that ‘fish feel no pain,’ but such
psychological devaluation is usually motivated by profit rather than fact. If any animal (human or
nonhuman) suffers, there can be no moral justification for refusing to take that suffering into account.

‘Racists violate the principle of equality by giving greater weight to the interests of members of their
own race when there is a clash between their interests and those of another race. Sexists violate the
principles of equality by favouring the interests of their own sex. Similarly, speciesists allow the
interests of their own species to override the greater interests of members of another species.’

What does it matter if we love dogs and yet are happy to see pigs as a mere production commodity?
Certainly such speciesism makes no difference to a veterinarian’s performance or to their level of
satisfaction in life. However, it appears self-evident that if one’s compassion is judgemental when it
comes to animals (‘I will save this animal’s life but not that one’), it is impossible for such compassion
to not be judgemental when it comes to people as well. This is because compassion is non-specific.
Like a hormone, it is either in the blood or not. When we try to direct it at some but not at others it
becomes diffused and weakened. Either it is on or off, and like a hormone, once released it permeates
our entire body. The only thing we can alter is its quantity. When we try to turn compassion off
because we are in the presence of someone or something we dislike, we turn off our compassion.
Eventually, we tire from flicking our compassion off and on and we find ourselves emotionally blocked
or deadened. Our feelings become jaded and we find ourselves numbed from feeling. Kant hinted at
this notion of emotional jadedness when we wrote;

‘If a man shoots his dog because the animal is no longer capable of service, he does not fail in his
duty to the dog, for the dog cannot judge, but his act is inhuman and damages in himself that
humanity which it is his duty to show towards mankind. If he is not to stifle his human feelings, he
must practice kindness towards animals, for he who is cruel to animals becomes hard also in his
dealings with men.’

I remember the words of an African missionary who, while lost in a jungle, begged for God to save
him. That night, after a Negro had found him and taken him back to his village, he wrote in his diary ‘I
asked for salvation by you, God and all I get is a black man!’ It is only in the last fifty years that racism
has become politically incorrect. It is naive to think human are to suddenly eradicate our speciesist
ideology overnight, yet we should live in hope. After all, evolution ascribes humans as a by-product of
millions of years of genetic transformation from single-celled organisms. To assume that evolution is
static, that other organisms may not be moving in evolutionary steps toward becoming humanoid is
naive. Over a large enough time scale, is it really so easy to distinguish who is human and who isn’t? A
bacterium in our bowel may have offspring that in a million years hence have evolved into a human like
ourselves. Shakespeare’s remarks in *Hamlet* about the cyclicity of nature may be a portend of this
temporal evolution, ‘You may eat of the worm that has ate of a king.’

**Vegetarianism**

Many arguments for and against vegetarianism have accumulated. Many of the vegetarian arguments
are contradictory because they are based on anthropomorphic arguments. Kant and Schopenhauer
showed that the only real moral assertion is that animals are killed painlessly and without being
frightened. Most western abattoirs ensure painless killing. The only weak link in the meat-eaters
argument is the issue of whether an animal is frightened prior to death. There is no doubt that stress hormones (cortisone & adrenaline) and physiological parameters (blood pressure and heart rate) are elevated at the time of death. But ‘fear’ is difficult to quantify. Besides, is it possible to always assure that an animal is killed without an impending fear of death? For practical reasons it is almost impossible to avoid. Slaughtering of animals on the farm may reduce the degree of pre-death fear, but cannot guarantee a fearless death due to the variability of skills and methods used by individual farmers. Thus, commercial pressures will ensure that abattoir killing is continued as the most practical method of killing animals for consumption. To ban animal slaughter for human consumption based on morality could be itself morally wrong since it disturbs indirectly the moral expectations of most people (‘I am stressed because I cannot eat meat’). The sanctity of life can be broken down into two categories; that there is special value in the life of a species and that there is a special value placed on an individual in that species. The clear moral dilemma thus lies not in whether to kill an animal for meat or not, as this is a long-held social choice and difficult to shift, but in whether the commercial production of meat for human consumption is painful to the individual animal consumed. Do poultry suffer in intensive poultry farms? It is morally certain that they do, considering the methods we use to house them, feed them and force them to grow. Is there suffering by veal calves during their housing in pens up until slaughter? There is sufficient evidence to prove they do. The argument is then whether we choose to minimise the harm they experience during their lives, or do we attempt to abolish such practices. I have highlighted the word ‘choose,’ because it is our personal choice to decide that makes us sentient creatures. The recent outbreaks of BSA again, this time in the USA in late 2003 shows how insidious the impact of choices made by agribusinesses when they began to incorporate beef byproducts into beef feeds. The subtle introduction of same-species food products was not possible by agribusiness until meat itself became devalued. To devalue animal products (meat, skin and blood/bone), a devaluing procedure is utilised. In any apartheid system, there are three basic rules to uphold a superior race, breed or species; labelling, physical segregation and laws to uphold this segregation. And the philosophy behind intensive animal farming is no different to any other apartheid system.

Firstly, a devaluing label or nomenclature is used; we call pig meat ‘pork’, cattle meat ‘beef’. Then segregation; we separate the business of meat production from general social arenas of consumption. In Western supermarkets and grocery stores, we see prepared meat, not the freshly killed animal hanging from a hook. Slaughter of animals and the preparation of meat is veiled and we lose our connection with the source of the meat. Then we enact this segregation legally. The preparation and inspection of meat is by legally appointed inspectors who oversee the whole procedure. Society then leaves the messy and bloody business to government-funded bodies who ensure that standards are maintained. But vigilance cannot be guaranteed when economic interests are involved. Somewhere along the line, the notion of feeding self-species products was raised, introduced and became unanimously accepted. Beyond the use of finger-pointing, it is better to at least recognise the source of the problem and ban its further application. Unfortunately, economics may hinder this transformation for some time yet.

Humans abhor cannibalism in our own species, and evidence in cannibal tribes in Papua New Guinea exemplified the consequences of such an abhorrent act. The fact that BSE now occurs in cattle is no surprise. Nor would it be a surprise to find such outbreaks of similar diseases in any species which was raised intensively on same-species food products.

Regardless of our stance on whether to eat meat or not, and whether we choose to act on our own moral impetus, it is essential to at least ensure that;

1. Animals don’t suffer stress unduly during life
2. Animals don’t suffer unduly at the time of death
3. Animal products (meat, skin, byproducts) aren’t commoditised and thus morally devalued
The oldest code of medical laws and ethics in the world is the Babylonian Code of Hammurabi that appeared about 2250BC. This ‘eye for an eye’ code makes ‘failure to cure’ the personal responsibility of the physician. This approach, reintroduced in modern courts, assume doctors are responsible for all the outcomes of medical interventions. Unfortunately, by regulating the duties of physicians and punishing failure, physicians become reluctant to treat those cases where outcome is poor. The Hippocratic Oath is the code which members of the public and the medical profession most commonly refer to. It explains the expected and required professional norms. The Hippocratic Oath (written in the fourth century BC) has, however, no direct link with the famous Hippocrates. It obliged doctors always to work for the patient’s benefit, not to give deadly drugs, not to misuse their position, and to keep silent what they may learn during the course of treatment. Hippocrates’ contemporary, Plato challenged this rule. He thought that ‘doctors should not only be concerned with the prolongation of life but should consider the interests of the state.’ However, despite Hippocrates’ assertions, the Hippocratic Oath is a code by which most Australian and American practitioners have never agreed to abide. Nevertheless, things have recently changed in USA and Canadian medical schools (although not in Australasia) who use the Hippocratic Oath in virtually all commencement exercises. Although veterinarians abide by a different set of laws/moral codes as prescribed by individual state Acts the moral essence is equivalent to that prescribed by Hippocrates; most notably to respect life, reduce suffering, etc.

Aristotle describes ‘goodness’ as a form of virtue and that practise and habituation are necessary to acquire it.

In Plato’s Republic, there is mention of the tale of the shepherd Glaucon, a person reminiscent of Golom, in JRR Tolkien’s Lord of the Rings. Plato’s original story describes how Glaucon was a lowly man who one day discovered a magical ring which gave him powers to become invisible. Using this ring, he was able to seduce the queen, kill the King and become king himself. The story is a symbolic tale of how power corrupts, implying that ultimate power, such as Glaucon’s ring, would lead to the person abandoning all ethical standards. Plato remarks that a man who could under such tempting circumstances refrain from abusing his power would be good, but despised by his fellow man.

What relevance does this notion of goodness have to veterinary practise? Plato tries to convince his readers that until we put to ourselves the questions which faced all philosophers, we have not chosen how to live, but merely why we live, which has already been answered by the fact that we are already alive. The compassionate attitude of relieving suffering in animals does not necessarily conflict with our other professional need to improve animal productivity for consumption. With an inherent consideration of animal welfare, the two can co-exist in a broader framework of animal ethics. Conflict only arises when we ignore the existence of animal emotions, instincts, drives and motivations as clearly described by animal ethologists. Thus in striving to ensure we act ethically and for the betterment of patients, we are in turn benefiting ourselves emotionally.
Do animals feel pain? There can be little argument that they do, but as to whether there is an intellectual or mental perception of this pain is debateable. But by attempting to diminish an animal's suffering by saying they cannot abstract their pain into an art form is wrong. Richard Sarjeant in his book on pain wrote that:

‘Every particle of factual evidence supports the contention that the higher mammalian vertebrates experience pain sensations at least as acute as our own. To say that they feel less because they are lower animals is an absurdity; it can easily be shown that many of their sense are far more acute than ours – visual acuity in certain birds, hearing in most wild animals, and touch in others; these animals depend more than we do today on the sharpest possible awareness of a hostile environment. Apart from the complexity of the cerebral cortex (which does not directly perceive pain) their nervous systems are almost identical to ours and their reactions to pain remarkably similar, though lacking (so far as we know) the philosophical and moral overtones. The emotional element is all too evident, mainly in the form of fear and anger.’

The only objection most philosophers, especially Cartesian philosophers, have to this argument is in relation to how animals express this pain, in particular their language skills. As will be discussed later, the evolution of language and its uses are not a direct indicator of intelligence per se, and must be dismissed. Besides, the ability or not to use language by a humans or animals is not relevant to the question of how they should be treated. Though Wittgenstein believed that there is no consciousness without language, this too is disproved by modern research on animal’s ability to abstract, and non-verbal communication. It is also irrelevant to the argument about an animal’s pain state. That human’s need proof that an animal feels pain is more a statement of their empathetic weakness than anything else.

The writer James Joyce once said that the actions of men are the best interpreters of their thoughts. Such a statement is clearly evident when I see veterinarians dedicating their lives to helping animals. Beyond a need for money and meaning in life, such actions by veterinarians convey what their thoughts, intentions and motivations must be - one of altruism. Why else would someone dedicate their time (which is the greatest asset anyone has to give) to such a cause, except for the pleasure of it?

Veterinarians are by nature attracted to the profession for reason of scientific curiosity, animal rapport, providing service to society, etc. One would assume that there is an inherent sense of morality and ethics contained within these motivations. Yet, when we have a mortgage to pay, children to put through school and holiday expenses to meet, are we tempted to over-medicate or over-diagnose a patient’s problem? None of us is immune to such temptations. Yet, there is no restriction on the use of diagnostic and treatment modalities. It is easy to justify doing another diagnostic test when we know there are many bills to pay this month. Does it matter if we over-prescribe in such a situation? Will anyone know if we perform an X-ray and full blood test when it may not necessarily require it, merely to improve the weekly takings for our clinic? A simple answer is that in the short term, no.

When we consider the definition of a successful veterinary practise, what yardstick do we use? Is gross profit alone the sole arbiter of success? For many, the answer is yes. Being a good veterinarian simply means having a financially successful practise. Financial income is equivalent to client activity at the clinic, yet does it infer client satisfaction? How is client satisfaction determined? Total number of clients who use the services of the practise is one measure of satisfaction. Loyalty is another, as determined by number of visits by a client during a specified period of years. Another is referral of clients to the practise from other clients or other veterinary practises.

I remember once being told by a fellow veterinarian that she would rather have half as many clients and charge twice as much. But to extrapolate the logic of this assumes that her motivation for being a veterinarian is not to help others but to minimise her effort to that which gives her an income with the least amount of stress and time wasted. Obviously, the least amount of time spent at work is important, but the down-side of this equation is that the clients she has are only partly satisfied with her performance. It would be the same as saying ‘Give me a spouse who I can satisfy in half the time and I would be twice as happy.’ Such logic in marriage leads to dissatisfaction, stagnation and inevitably divorce. I do not know of any successful marriage where partners hadn’t spent a considerable time, usually late at night, trying to settle a dispute that needed to be resolved. These emotional issues which arise in relationships are no different to relationship conflicts with clients, albeit less intimate ones. To give only half our effort to anything is to leave ourselves feeling as short-changed as our partner or client does.
I remember once working as a locum veterinarian in a small town that had two neighbouring practises. A friendly compassionate vet operated one clinic while a stern business-driven vet operated the other. The latter vet had by far the greater income. He drove a new car and had a well-appointed vet clinic whereas the other vet, who had twice the number of clients as the other seemed satisfied with a basic service which he provided to his more satisfied clients. I cannot judge one vet with the other except to say that I always preferred locums at the friendlier vet’s practise.

Being good as a person is not about wearing a halo. It is about helping patients and dealing with clients as people who are not as separated from us as we think. Having a veterinary degree does not give us the distinction of being above anyone. On the contrary, a veterinary degree requires of us more commitment to others than we normally would accept. Since knowledge brings with it responsibility, we have to accept that it is par for the course for us to be more responsible than if we did not have the qualification in the first place. Bearing this in mind, we should choose the level of our responsibility to veterinary science and live it fully. We may only work part-time or not at all; but to use a vet degree solely as a means of income without commitment to patients and clients is comparable to the hedonist who seeks mere pleasure without commitment. Invariably, they suffer from isolation, despair and moral impoverishment.

**Professional responsibility to clients**

> *What disturbs people’s minds are not events but their judgments on events.*
> *Epictetus 500BC*

A vet in the course of their work may have a profound influence on clients. Therefore, special attention needs to be given to professional ethics. The ethical awareness, sense of responsibility, and professional competence of every vet is important. A veterinarian should respect society’s general social and moral norms and be aware that a deviation from these can affect the confidence in an individual veterinarian and the profession as a whole. It is a responsibility of a veterinarian to maintain and improve their professional knowledge and keep up with developments throughout their professional career to be able to offer clients and patients the best possible service. A vet should always ensure an adequate level of competence in the spoken and written form of the scientific language, and strive to know the professional and personal strong and weak points so as to be able to realistically assess the cases they can or cannot accept. A vet should always seek to maintaining professional competence, and try to recognise the possible impairment of their professional skills due to age, time restraints, financial responsibilities and family commitments.

When giving information to clients, a vet should give as true a picture as possible regarding his/her competence and skills, and co-operate where necessary with other veterinarians and respects their skills. Should the case so require, the vet should consult another vet or specialist, or acquire the necessary guidance or further education. If the vet’s own skills or experience are not adequate for the case at hand, they should endeavour to make certain that the client gets the necessary treatment, and refers the client to another professional. In their work, the vet should attempt to use medical/surgical methods which they have a good command of, and which is in accordance with the client’s needs. A veterinarian should continuously evaluate the effectiveness and effects of the regular medical/surgical procedures that are used in treating the patient. In their activities, a vet should never be influenced by ungrounded professional advancement or financial interests.

With respect to offering a veterinary service, the vet should treat the patient in accordance with the client’s wishes, and therefore should clearly define the expected fees likely to be incurred on the work carried out. The vet should always ensure that the client gets enough information presented in clear form about the methods of treatment used, and about the predicted results and prognosis.

When it comes to overnight hospitalisation of medical cases, what the client is expecting for their pet should be considered. I think that if most clients knew that their pet was left alone in a clinic overnight without supervision they would prefer to be referred to a hospital that has staffing throughout the night. Most clinics have signs informing clients that no one is on site, but I don’t think emotional clients notice them or truly understand that their pet will be unattended when the vet goes home.

When we are deciding to refer a patient to a veterinary specialist, the best interest of the patient is the most important issue. Most veterinarians refer for that reason. Historically, veterinarians have been preoccupied by the financial aspect and let that interfere with referring the patient. They tend to
decide for their client. They believe that their client will decline referral because of the expense and that is simply not my experience. Some families want that level of care and expertise and are very willing to pay for it if available. One of the ways to enhance the referral relationship is to have a trusting relationship with a specialist. It is important that the non-specialist veterinarian is kept informed about the patient and is able to reassure their client that their pet is getting the care it needs.

Finally, it goes without saying that a client’s race, gender, social standing, religion, political opinion, or other similar matters shouldn’t affect the way a vet treats a client or the animal under their care.

**Professional responsibility to peers**

All veterinarians are taught at university to maintain good relationships with professional peers. As a general rule, veterinarians should refrain from slandering their colleagues not only to avoid having our comments reported to the Veterinary Surgeon’s Board, but also to prevent a defamation suit from the receiver of our complaints. However, what do we do if, in our opinion, a member of the profession is acting in conduct that is unprofessional? Do we report the veterinarian, contact him personally and discuss the matter, or ignore it, hoping they will learn the errors of their ways? Though a veterinarian should respect the skills and methods of operation of their colleagues, this does not protect the colleague from consequences caused by poor skills, erroneous actions, or malpractice. Thus inaction on our part will allow another colleague from continuing with a supposed unprofessional act. Discussions about the professional skills of another colleague are relevant and based on facts. Should the vet find the professional capacity of his/her colleague to have deteriorated, they should perhaps have a discussion with the person in question. This however, is fraught with problems. Some veterinarians will become immediately defensive when told they are in error on a particular subject or clinical case. Others might become offensive and counter-attack with accusations of their own. Should a discussion of this kind lead to no results, and the benefit of clients is at stake because of the colleague’s inability to work, the veterinarian is obliged to contact the Veterinary Surgeon’s Board for further guidance.

Should a client transfer to another vet, or, if two vets have a common client, it is recommended they consult each other, unless this is not wished for by the client. Should two vets have different professional views about a common client, it is always recommended that these will be discussed in the spirit of collegiality, and they will be solved, as far as possible, so that no inconvenience is caused for the client. The veterinarian aims at keeping up collegial conversation, with the object of distributing and increasing reciprocal information and solving problems arising within the profession. As a last resort, the appropriate veterinary surgeon’s boards may need to be contacted to mediate over the problem. Though never easy to assuage, any guilt which may be felt associated with such actions (‘to dob in a mate’) should be weighed up against the ramifications to future patients and/or clients.

**Professionalism**

*Honour is not accorded to virtue because of the office held, but to the office because of the virtue of the beholder.’*

_Boethius_

People, by and large, make rash assumptions about professionals. They generally assume that there is no greater sense of intellectual degradation that after an interview with a doctor. That white coats hide ivory hearts. That all scientist have had personality-bypasses. And that all veterinarians love animals. What we can say about professionals in general is that generally they are people, and thus susceptible to a multitude of personalities, interests, ambitions and beliefs. Not all scientists are atheists, and not all vets drive Landcruisers. However, personalities aside, the profession as a whole has expectations for those under its employ.

Recently, the American Academy of Paediatrics proposed that ‘professionalism’ be taught to undergraduate medical students as part of their curriculum studies. They defined professionalism as including such things as honesty, integrity, reliability, responsibility, respect for others, compassion, empathy, self-improvement, self-awareness, knowledge of limits, communication, collaboration, altruism and advocacy. Such a model of professionalism is integrating slowly into professional fields including veterinary science. However, this model of professionalism does have some limitations in veterinary science. These limitations include limited human-animal interaction in a clinical setting, an
entrenched Cartesian belief in restricted/non-existent animal cognitive functions, and the role of some animals as providers of food. With time, it is hoped that the veterinary profession will fully embrace these aspects of professionalism, which the medical fraternity has already included in its curriculum.

If promoted at all in our profession, professionalism seems to have been taught to us as an ideal that protects things and ideas such as: the integrity of the current database of veterinary information, the use of technical jargon instead of the transparency of everyday language, rules or creeds devoted to technical expertise, and rules that exclude promotion (advertising)\(^3\). Other issues, however, are equally important, including:

- **Suspension of self-interest** - this is very hard at the end of the day after seeing many difficult cases. The last patient, even the one that comes in late, deserves our best efforts. This applies to veterinary technicians, staff and everyone else at your hospital.
- **Honesty and justice** - the reputation of a clinic and the profession hinges on your integrity and fairness.
- **Technical competence** – we have graduated technically competent from university, but our professional reputation depends on a continually growing technical competence through continuing education. Our profession, unfortunately, has many who do not feel continuing education is a priority.
- **Authority and accountability** - authority and responsibility go hand in hand. What we provide is a service not just a market commodity. Although we are accountable to our vendors and employees, our major focus must be on our patients and clients.
- **Communication** - teaching and listening to our clients is vital. Busy practitioners should never be so engaged in the process so as to neglect to inform and be informed.
- **Humility** – all university degrees promote intellectual superiority. In some individuals, intellectual abilities can go to their head (‘I have a right to be heard, respected, praised’). Our profession has a good reputation for graduating down-to-earth professionals, largely because the patients we are dealing within are not entirely disconnected from nature. (It’s hard to be arrogant mucking about in a pig pen). However, the sterile clinical environment can divorce us from the reality which is a pet’s life. It pays to be on guard against pomposity and hubris.

### Relationships vs. marketingships

*‘If you don’t know where you are going, any road will take you there.’*

*Alice in Wonderland*

Most relationships between veterinarians and clients is initiated by a sick animal requiring medical attention. Therefore, this relationship is one of dependence, obviously differing from the typically intimate (interdependent) relationship. Thus the instigator of a relationship between veterinarians and clients is for the most part servicing a need and its reward for the veterinarian measured primarily in pecuniary terms. As unpalatable as this may sound it does not infer that veterinarians are motivated solely by profit or that this is reckoned in their therapeutic approach. However, marketing maximises the vet-client relationship for purely pecuniary gain. For many veterinarians, marketing is still a dirty word with connotations of unscientific and uncompassionate motives. However, we cannot avoid the obvious truth that without an income, a practise cannot survive and prosper.

In order to tackle an economic market, sociologists make general assumptions about human nature and society as shown in Figure 1.
Basic Assumptions about Human Nature:
- Human beings are essentially self-oriented and inclined to pursue their own interests at the expense of others.
- Human beings are symbolic creatures. Their environment is a symbolic mirror of their perceived reality.
- The human potential to hope and aspire (emotionally, economically, socially) seems unlimited given social conditions.

Basic Assumptions about Human Societies:
- Societies present organised systems of human survival and reflect origins as well as predicted outcomes.
- Human societies operate under conditions of perpetual scarcity for most resources needed by their members.
- The continuous confrontations within and between societies are a necessary condition for growth and social change.
- Human societies consist of inherently unequal elements. The result of dealing with this inequality is social organization by classes: the haves & have nots, the satisfied & desirous, the males & females, the majorities & minorities, the rich & poor.
- Because of this inherent inequality and perpetual scarcity of resources, competition for power and material is endemic in all social systems.

Around 1950, the American psychological community bought into a new idea - operant conditioning, also known generally as behavioural psychology - B.F. Skinner being the major proponent. Skinner’s point was that there was no need to understand how the mind works, if we are able to manipulate behaviours as we want. We can modify behaviour, in fact we already do, to achieve the behaviours we desire in people. All that is necessary is to find the correct stimulus. This theory, termed operant conditioning and based on the work of the Russian psychiatrist Ivan Pavlov, predicts social behaviour in humans based on environmental stimuli. It is based on the premise that humans are exclusively the by-product of social forces, and that he becomes the type of person society wants him to become. That is, he is a social animal. The hard premise which social theory assumes is that what is not expressed does not exist. Though capitalist in origin, this theory closely emulates the sinister philosophy of dialectic materialism as proposed by Engels and Marx, which denigrates individual autonomy at the price of social cohesion. However, its permeating influences in our capitalist psyche are manifold. Social theory believes that existence shapes consciousness or that circumstances alter humans; that our inner core is not the constant, unchanging soul Christendom has ascribed for us.

Social theory makes a number of basic assumptions about people when they consider commerce and marketing. These include the notion that people who engage in economic interactions are naturally seeking to maximise profits. Sociologists also believe that most gratification among humans is obtained through using others for their advantage. Thus people who have greater access to information about social, economic, and psychological advantage consider alternative, more profitable situations. It is also believed by sociologists that people naturally calculate the best possible means to compete in rewarding situations. The same is true of punishment avoidance situations. People are perceived socially as goal-oriented in a freely competitive system and that ‘social credit’ is preferable to social indebtedness. The more deprived the individual feels in terms of an act, the more the person will assign value to it. Social exchange theory assumes that we are all in it for ourselves and that the responses evoked by people is more important than their internal situation. Garrett Hardin summarised this view in The Limits of Altruism when he wrote that public policies should be based on ‘an unwavering adherence to the cardinal rule: never ask a person to act against his own self-interest.’ If we believe these pragmatists, it’s easy to become cynical about helping others. But there is no way of assuming that increased personal wealth must be the goal people set for themselves. Fortunately, most people recognise that money is at best a means of achieving part of their happiness.

If we consider morality as being a desire to help people, and if being unable to help people we ensure that we do not harm them, then how do we determine a middle road between what is profitable for a practise and what is self-orientated over-servicing? The answer is obviously a moral one, but certainly over-servicing can include such things as:

- Over-treating - diagnosing and treating diseases which do not significantly improve quality or quantity
of life (e.g. minor skin diseases, lumps, bumps, etc). It would also include the use of excessive diagnostic/laboratory tests to confirm what is already known from clinical evidence (e.g. X-ray, blood test and ultrasonography for a cat-fight abscess)

- **Over-prescribing** - using more than the necessary medical/surgical modalities to treat a problem (e.g. treating a mild case of kennel cough with antibiotics, expectorants, mucolytics and anti-inflammatories), or using more expensive medications when cheaper ones would suffice.

When it comes to advertising, little national uniformity exists regarding how much and what sort of advertising is allowed. In surveys of medical, veterinary, dental and legal professions, it has been noticed that there has been a steady movement towards acceptance of advertising in some form. At present, there still remains substantial reservation towards the use of persuasive advertising. Although patients are viewed as being more demanding than in past times, practitioners still expect their relationships with patients to be long lasting. In spite of this, there is an acceptance that more competitively-based competition and thus advertising will continue. In view of the kinds of advertising that are now used by medical and veterinary practices, and of the change in attitudes that has occurred, control of advertising might cease to be a concern to the profession

According to marketing gurus, the aim of marketing is to establish, maintain and enhance relationships with customers at a profit. To do this, trust is an essential role. Past and present relations with clients is vital to maintaining trust. Distrust is inevitable when expenses are beyond those anticipated by clients. In vet practise, the initial service we provide provokes one of three responses by clients; satisfaction, dissatisfaction or a neutral response. Most new clients thus offer a veterinary practise a two-thirds chance (positive or neutral) of repeat service. The vet-client relationship once formed sustains itself through trust. It is the main ingredient for stable and durable commercial relationships. Trust is established through competency and an ability to communicate care, and forms as a bond at the personal level (vet-client or nurse-client) rather than directed toward a company (practise-client). Once established, respect from both parties for each other beyond their immediate service-for-money needs sustains the relationship.

If we consider the relationships formed between employees in a veterinary practise and clients (i.e. vet-client, nurse-client, etc), these relationships can contribute both positively and negatively to the practise success. For example, this relationship contributes to the practice’s success by fostering customer satisfaction and loyalty. However, the dark side of this is that it also increases the customer’s willingness to follow a specific vet if they leave the practise. This is minimised by fostering relations between a client and several employees instead of a single one, as well as by stimulating employee satisfaction and retention in order to continuously nurture the client-base. Employee satisfaction is thus pivotal to maximising practice success. In other words, a moral practice has high morale.

John Stuart Mill promoted what has become known as social utilitarianism which is a principle of ‘the greatest good for the greatest number of people.’ Mill stated that ‘the greatest good is promoted by allowing citizens to criticise their government, to worship as they please, to choose their own mode of life, and to think and to act as they choose.’ Simply put, social utilitarianism defines the impact of actions on the individual’s happiness. When people do not find in life sufficient enjoyment to make it valuable to them, the cause of this development is generally because people are caring for nobody but themselves. Next to selfishness, the principal cause which makes life unsatisfactory is want of mental cultivation. Mill writes:

> ‘A cultivated mind - I do not mean that of a philosopher, but any mind to which the fountains of knowledge have been opened, and which has been taught, in any tolerable degree, to exercise its faculties - finds sources of inexhaustible interest in all that surrounds it. In a world in which there is so much to interest, so much to enjoy, and so much also to correct and improve, everyone who has this moderate amount of moral and intellectual requisites is capable of an existence which may be called enviable; unless such a person, through bad laws or subjection to the will of others, is denied the liberty to use the sources of happiness within his reach, he will not fail to find his enviable existence, if he escape the positive evils of life, - such as disease, indigence, and the unkindness, worthlessness, or premature loss of objects of affection.’

**Profitability vs. Over-servicing**

> ‘You make a living by what you get.
> You make a life by what you give.’
It has been said that a veterinary makes a living by prescribing something that a client needs once a year, and that a millionaire is made by prescribing something their client needs every day. Falling into the former category, I find that there is a fine line between what is essential in veterinary medicine and what is superfluous. As a veterinarian, I probably fall into the category of under-servicing, which is probably no better or worse than over-servicing. My motive is to keep costs down both for my clinic and the client, but when this goes wrong, it is as bad as if I had in the first place simply over-medicated. It requires constant judgement to know what is the best treatment and the best-priced service, one not necessarily the same as the other. I'm good at being in business, but being good in business is another kind of art altogether.

Only recently has the economical importance of the human-animal relationship has been acknowledged. Improving animal productivity by strengthening human-animal interactions and environment enrichment can be debated solely on economic merit alone, although the moral merits of it far outweigh mere pecuniary advantage. Direct contact between humans and domesticated animals as well as providing environmental stimulation has shown a direct benefit to reducing the levels of stress indexes in most animal species.

There are numerous factors which effects the economic viability of clinical veterinary practice. Graduating with scientific skills and knowledge may be the best preparation for success in veterinary applications but non-veterinary skills are equally important in modern financially-orientated practises. The College of Veterinary Medicine and Biomedical Sciences at Colorado State University has recently undertaken major initiatives to improve training of their students in veterinary practice management and business skills. While there is ample evidence that the scientific and clinical skills of their graduates remain very high, there is also evidence that additional business skills promoted greater economic success. Marketing has now become a significant component of clinical practise. The pressures of marketing emerged as a result primarily due to the changing role of animals in society, wellness and prevention replacing curative medicine, the expectation of client’s for deeper vet-client relationships, increased client demand for extended or ancillary services (laboratory, radiology, etc.), and diminishing client numbers due to increased numbers of practising veterinarians. To compensate, veterinarians are forced by economic pressures to increase fees, extend services, promote marketing ventures and explore niche markets.

Business analysts have studied many small animal practices and identified areas significantly short-falling in review in the order of hundreds of thousands of dollars each year. Profit areas include maximising returns on laboratory, senior care, dentistry, following-up on long-term medications, and behavioural care. Under-utilised product categories including pet food, flea control, and heartworm preventive. Highly profitable veterinary practices achieve twice the average level of profits based on targeting these profit areas. This of course makes it more likely to generate conflict between marketing and over-servicing, a dilemma endemic in human medicine.

The Australian National Audit Office estimates that medical fraud (over-servicing, unnecessary referrals and ‘kickbacks’ from drug companies) cost the Commonwealth between $52 million and $135 million per year. It estimated that inappropriate practice could be costing a further $60 million per year. In Australia, medical over-servicing has a direct influence on the quality of medical service. The increase supply of doctors has led to a significant over-serving problem, resulting in some cases in poorer health outcomes. It is interesting to note in human medicine, a health service being driven by profit does not necessarily equate with quality health service.

In 2000, the Medical Practice Amendment Act came into effect, giving the New South Wales Medical Board significant new powers in several areas including the performance assessment of medical practitioners, professional conduct involving ‘kick backs’ and over-servicing. The Act declares that ‘it is an offence for the employer of a registered medical practitioner to direct or incite the practitioner to engage in over-serving or to engage in conduct that constitutes unsatisfactory professional conduct or professional misconduct. Engaging in over-serving is to provide a service that is unnecessary, not reasonably required or excessive, or is otherwise prescribed (s116A).’ The ramifications to both medicine and veterinary practise are yet to be felt, but can be anticipated.

It is essential that the veterinary profession is maintained as a strong, vital and independent source of expertise in our community. However, professional liability threatens to endanger this. Legal liability for vets is leading to the development of overly cautious attitudes; services with a greater risk of
liability are curtailed and defensive practices adopted. Ultimately, this will result in a less than optimal level of services being provided to the community at greater cost to the detriment of consumers of services and the community generally. At a time when considerable pressure is on professionals to contain the cost of the services they provide, their exposure to unlimited liability may by necessity lead to defensive over-servicing and greater expense.

Over the course of the past decade, damages claims and litigation against professionals have increased dramatically. This is mainly due to the fact that professionals often possess the most obvious source of assets against which a plaintiff may recover, namely the professional indemnity (PI) insurance of the firm and its assets, together with the personal assets of the individual professionals. As a consequence, PI insurance premiums and deductibles have risen markedly, whilst at the same time commercial insurers have increasingly withdrawn from the PI market, particularly at the higher end where such cover is just not available at the levels required. Given the rising cost and declining availability of PI insurance, under the present system there is simply no guarantee that assets will exist to satisfy successful awards against professionals.

The human medical marketplace has a number of built-in obstacles to achieving efficiency and quality care. Among these problems are:

- a lack of consumer understanding and information about the medical product, partly due to technological advances and partly due to medical dominance whereby doctors control all the information
- total professional control over treatment - patients are at the whim of doctors in terms of time for consultancy, type of treatment etc
- uninsurable risks - like being chronically ill, old or handicapped
- misallocated supply of services.

The consequences of this for patients are stressful as well as intervening in the curative process. In human medicine, the sheer size of the budgets now available for medical care has proved attractive to entrepreneurs within medicine to corporatise health care, to expand the private hospital sector, and increased financial support for industries supplying goods and services to the health care industry. As we have seen, the increasing privatisation of health care has led to many consumer problems - high costs, poor quality, and over-servicing. Medicine for profit is thus problematic. Professionalisation in medicine has so far only raised the status and wealth of doctors in the private sector of health care.

Over-servicing has been a constant concern by regulatory bodies within the veterinary profession. Section 41(2) and section 46 of the Australian Veterinary Surgeons Act 1987 describes over-prescribing or over-servicing for financial benefit as a breach of ethical or professional standards. The commercial pressures in veterinary medicine along with the emerging complexity of the business world will make practicing in tomorrow’s world very challenging. It will take more than just learning the technical side of our profession to make it work. It will take leadership and a high degree of professionalism from all practitioners. An example is the emergence of the Internet as a source of veterinary information not only for vets but to clients as well. Future clients are likely to demand a strong hand in diagnosis and treatment planning. And with modern culture moving to a more instant gratification standard (e.g. Nike’s slogan, ‘Want it? Buy it!’), clients may not cope with traditional methods of treatment. Clients will be coming to us after having researched available therapies, probable diagnoses, and treatment models (product specifications) in hand. They will be used to getting their demands as a consumer met, and our conversion to commodity status has already begun. Dissatisfied with one veterinarian, they are more likely to seek another. The result is that competent, ethical practice becomes ever more difficult. This has already begun to happen with law practices and human medicine and there is nothing inherently immunising about veterinary practice in this regard.

**Being broke is temporary, being poor is eternal**

> ‘Thinking is the hardest work there is. That is why so few people engage in it.’

*Henry Ford*

Most of us have heard the saying, ‘birds of a feather flock together.’ The same is true for people, whether they are flocking together for wealth, as artists or musicians or tennis players. Like attracts like. Robert Kiyosaki, author of *Rich Dad, Poor Dad*, remarks that ‘if you want to become rich, you need to network with those who are rich or who can help you become rich.’ There are many ways to become
rich; by marrying into money, by being a crook, by being greedy, by living cheap, by sheer hard work, by being smart, gifted or talented, by being lucky (e.g. Tatts-lotto), by inheritance, or by building your own business.

Can business schools teach us how to run a business? If we look at the entrepreneurs of the twentieth-century, most are dropouts from reputable MBA courses. This includes Bill Gates, Steve Jobs, Ted Turner, Henry Ford What they all emphasise is that the ability to sell is the number one skill in business. And the ability to sell requires emotional intelligence. Warren Buffet, America’s richest investor says, ‘a person that cannot manage their emotions cannot manage money.’

In the direct mail business, if a company mails out one million pieces of mail and gets back a 2% response, that is often considered very successful. All the great people of history are great at selling. And the more rejections they receive, the better they are at selling. What is important is what we are trying to sell; whether it is condominiums, disposable condoms, peace, sanity or war. The choice determines the fruits of this labour of love. Thinking that being intelligent is enough to make your business successful is in error. Leadership skills and communication skills are far more important assets. Fear and greed are what drive business and are what can make it either successful or not. Being too cautious for fear of failing is as bad as being too greedy for quantity of clients at the expense of quality of care.

It doesn’t matter if you want to be a saint or a sinecure, what matters most is how you live your live. How you live your life is shaped primarily by your dreams. What you dream is what you become.

The drug industry/vet relationship

In veterinary practice, ten to thirty percent of general running costs are incurred through use of pharmaceuticals. From aspirin to zithromycin, we dispense vast quantities of drugs to treat animals and keep them healthy. To do this, we need wholesale suppliers of drugs, who ship by the boxful our urgently needed provisions. Without pharmaceuticals, it would be nigh impossible to treat a sick animal. We could still diagnose and give advice, but most treatments require some form of drug. There can be no surgery without anaesthetics. No palliative care without anti-inflammatories. A relationship with drug companies and wholesalers is vital to a successful practice. It is for this reason that we listen to drug representatives who inform us of the latest drug release, of conferences they are supporting, to promote their latest product. We go, hoping to learn more about not only new drugs, but new treatment regimens.

Let us turn for a moment to the medical pharmaceutical industry, the big brother to the veterinary pharmaceutical industry. In human society worldwide, what determines medical health is intimately related to a number of social factors;

- economic status
- education
- physical living conditions
- culture and history
- issues of gender and human rights
- level of peace and safety.

Our race and religion, and how wealthy and educated we are determines where we live and vice versa. Where we live directly influences the access to medical treatment. This is not an entirely new concept. There is no level playing field in human medicine. Even in the USA, supposedly a land of freedom, liberty and equality, access to medicine is still largely determined by income. The pharmaceutical industry, which has recognised this connection between living conditions and health status since the early 19th century, is one of the largest and most profitable industries in the world. Because of its vast resources, the pharmaceutical industry has garnished increasing influence on the medical and veterinary markets, which, given the differences in values and priorities between professionals and the drug
companies, is a cause for concern. The pharmaceutical industry has acted to maximise its profits in ways that frequently conflict with medicine’s need for truth and full disclosure. Indeed, the industry has arguably worked to compromise clinician’s judgments as well as academic standards. For a pharmaceutical manufacturer to remain in business, it is crucial for them to develop a sensitive antenna for the needs of the public. Pharmaceutical marketing mirrors a subtle play with dormant notions about health, illness and healing. When looked at this way, the veterinary market has the potential to become a place where drug sales are negotiated by the marketing strategies of drug companies rather than on the grounds of efficacy and clinical relevance. Because of the burgeoning influence of drug companies on medical protocols during the past decade, ethical principles have eroded the relationship between clinicians and the pharmaceutical industry. Two areas in which the decline has been most notable are gifts to clinicians and the relationships of industry to educational and research activities. The gifts have become more valuable and industry representatives make gifts available under circumstances where frequently there is no educational program.

Clinicians increasingly find themselves in positions that present conflicts of interest with the interests of patients. Additionally, research which is funded directly by pharmaceutical companies has also shown to be biased, with evidence of duplicate publication, selective publication, and selective reporting. Academic-industry relationships have shown to create areas of conflict particularly where a financial commitment to projects can affect the welfare of animal. As well, conflicts of interest emerge in research decisions that could damage the integrity of research, especially scientists’ withholding of data and their redirecting of research in more commercial directions. These effects can also undermine public trust in and support of university researchers. The best solution at present appears to be a strict adherence to the existing ethical principles by clinicians and industry. Veterinarians must renew observance of professionalism and improve oversight and discipline. Although veterinary science cannot impose restrictions on the pharmaceutical and manufacturing industries, we can appeal to industry’s leadership. There must be an ethical common ground if clinicians and industry are to succeed in producing a climate of mutual respect and higher ethics; patients will benefit and physicians and industry will regain the public trust.

Global changes; from farm to fork

Caring for patients in veterinary practice has been re-examined in the context of a global imperative of increasing rationalisation of health-care based on an economic ethic. The notion of the global marketplace has spread to the domain of health services, so that ‘health’ has come to be seen as a commodity, with the animal’s body as its site, and the ‘patient’ a customer with the possible result that veterinarians work in a health-care supermarket. This rationalisation challenges veterinarians to submit or resist commercially driven health care. Such rationalisation challenges our values of the vet-patient relationship. The metaphor of the marketplace, underpinned by powerful global economic forces, can draw us into highly valuable returns but can also devalue personal meaning in the profession. We live in a fast moving-world. Business has accelerated to breathtaking speeds. Who has time to contemplate issues resulting from clinical challenges, or our motivation for working in this field. Clinical pressure forces us to decide things quickly, get the decision out of the way, and move on. However, biology shows us that you can’t plan ahead very far. Clinical procedures are never predictable in outcome. Things are going to happen that you literally have no notion are even possible. The key to succeeding in this environment is to not plan too far ahead, and to be motivated by outcome rather than income.

Another area concern for veterinarians is the complex and rapid-paced development of international trade. This is coupled with increasing societal demands for the production not only of abundant and inexpensive food, but also of food that is safe and has been raised in a humane and environmentally friendly manner. The new culture of global trade agreements, spurred by the development of the World Trade Organisation dictates massive changes and increasing integration of public and private sectors. The WTO demands that sanitary measures be scientifically based, placing epidemiology at the center of decisions related animal health and trade. This is a huge growth area for our profession and will require individuals with a skill set we do not yet provide in our educational framework. In most countries, veterinary education is parochial and focused on specialisation. A strong emphasis on companion animals fails to provide adequate training for those interested in acquiring the necessary skills for the emerging area of globalisation and trade.

If we do not begin to prepare our graduates adequately for this emerging market demand, other
professions which lack broad-based scientific knowledge about animal physiology and disease causation may take control. This could have devastating consequences for society, including incursions of unwelcome diseases, food safety problems, and public health issues. To prepare our new veterinary graduates for the future and this emerging market, it is important to nurture a global mind set within our academic communities. Areas in the curriculum needing further emphasis include production medicine, public health, food safety, and international veterinary medicine. The major trade corridors of the future regarding animal-based protein flow internationally requires that we ensure adequate flow of safe food products from one continent to the other.

I would like to conclude a discussion of ethics by leaving with a quote from Peter Singer. In *Writings on an Ethical Life*, he says:

'We cannot expect that this higher ethical consciousness will become universal. There will always be people who don’t care for anyone or anything, not even themselves. There will be others, more numerous and more calculating, who earn a living by taking advantage of others, especially the poor and powerless. We cannot afford to wait for some coming glorious day when everyone will live in loving peace and harmony with everyone else. Human nature is not like that at present, and there is no sign of its changing sufficiently in the foreseeable future. Since reasoning alone proved incapable of fully resolving the clash between self-interest and ethics, it is unlikely that rational argument will persuade every rational person to act ethically. Even if reason had been able to take us further, we would still have to face the reality of a world in which many people are very far from acting on the basis of reasoning of any kind, even crudely self-interested reasoning. So for a long time to come, the world is going to remain a tough place in which to live.'
Part 3:

Professionalism

‘Am I related to something infinite or not? That is the telling question of life. Only if we know that the thing that truly matters is the infinite can we avoid fixing our attention upon futilities and upon all kinds of goals, which are not of real importance. In the final analysis, we count for something only because of the essential we embody, and if we do not embody that, life is wasted.

Carl Jung
Part 3

Professionalism

‘Nosce te ipsum’ - know thyself

Veterinary science as a profession has mirrored advancements and innovations made by the medical profession. Though often thought of as the little sister to medicine, veterinary science has instigated many revolutions in science. Since the first veterinary graduates emerged from Alfort in France from 1762 onward, and then from the Royal Veterinary College in London (1792), veterinarians have spread worldwide as an official scientific profession in its own right. Veterinary science emerged during this Enlightenment period when science and reason began to replace religion and magic to explain the natural world. The early focus of veterinary science in Europe and Britain was with horses (primarily employed by the army). Later, the emergence of Koch’s germ theory, the development of ether-based anaesthesia and an understanding of parasitology, the profession began to diversify into disease diagnosis and treatment in cattle, sheep, pigs and goats.

In Australia, the first veterinary school was established in 1886 by Graham Mitchell and WT Kendall and in 1906 eventually incorporated into the University of Melbourne. Though a small number of graduates emerged from the university over the following decades (most notably Ian Clunies Ross), the demand for veterinarians didn’t emerge until after WWII, despite at the same time, approximately 3,000 doctors being in practice around Australia. The focus of veterinary science by the end of WWII was primarily with stock production, but with growing affluence, a growing social need for companion animals resulted in veterinary science shifting its teaching curriculum to include canine and feline chapters. Another important change has been the steady increase in number of female graduates, with now three-quarters of undergraduates being female. The changing face of our profession challenges graduates to adopt the philosophies and attitudes of their generation, assimilating what has been taught in the past together with social demands beyond the confines of our profession. But merely assimilating new attitudes is not enough for being a successful veterinarian, especially in high-pressured clinical practise fraught with emotional, financial and psychological difficulties. Not only do we have to deal with medical problems of patients, there are also the issues of client satisfaction, and managing interpersonal dramas with co-employees and employers.

When lay people are asked what the important aspects of a good veterinarian comprise, two common themes are voiced: competence and approachability. University and post-graduate course are adept at maintaining and improving our knowledge-base and competence in diagnostic and surgical skills. But trying to ascertain when constitutes approachability is far more nebulous. It is possessing not only PR skills, but also a degree of openness, honesty, credibility, morality and ethics. This book does not pretend to be a comprehensive breakdown of all the factors involved in how we become more approachable, but hopefully it may stimulate personal inquiry in the reader.

Analysis of the profiles of successful veterinarians has revealed that these two facets (competence and approachability) can be more accurately defined under seven headings. These seven facets (what I call ‘the seven Cs’) are the common attributes of most veterinarians. A self-actualised veterinarian who is successful both at a personal and professional level, has each of these seven components in their personality. (Note that each facet which is listed below comprises an inner and outer aspect.) These seven aspects of personality can be described as following: creativity, contentment, confidence, compassion, communication, clarity of vision and cognition (knowledge). What these attributes infer is self-knowledge, self-awareness and self-effectiveness.

These stages should not be thought of as a linear function. Most vets move from one stage to another at varying rates and attach varying importance to each aspect at different times in their journey of professional and personal self-discovery. Also, there is no one stage more important than another,
and each stage appears to have evolved in unison with the other stages. A knowledgeable practitioner is less clinically effective when short on compassion or communicability.

Such characteristics of compassion, communicability, contentment, etc, are not restricted to veterinarians; the seven Cs are fundamental personality traits found in most well-adjusted and interpersonally-effective persons. I have not listed these seven aspects as means to detract from the achievements of the profession, but to describe the working anatomy of successful practitioners. Nor are these seven aspects the only interpretations of what constitutes a ‘successful’ person. Successful people rarely need help along the way, no more than a healthy dog needs medication, but at times of crisis or conflict, it sometimes helps to use preventative medicine to help maintain health.

If you are a veterinarian intent on becoming rich, that is good. But if you find ourselves growing bored with money (what will I do with my next million?), if sometimes helps to consider other options such as re-examining your motivation for being or staying a veterinarian. It is after all, your motivations which predicts your life’s success. It is okay to no longer want to be a veterinarian, but to use your veterinary skills merely to make money (wrongly motivated) is detrimental. Conflicts arise at personal and interpersonal levels, resulting in emotional dissonance, which leads to anxiety, stress and/or boredom. At such times, we should ask ourselves some hard questions, and perhaps re-examine why we pursued that ‘dream’ of becoming a vet in the first place. After all it is our dreams that inspire our life and work and consume our all too brief life.

The seven facets of a successful professional personality are listed below.

1. **Cognition**
   - Ability to assimilate new ideas into an existing framework of knowledge.
   - Ability to disseminate new knowledge with others.

2. **Clarity of vision**
   - Ability to see clearly through the ‘smoke’ of emotions in a professional setting.
   - Ability to see emotions as an important facet of human expression.

3. **Communication**
   - Ability to relate effectively and accurately with people, regardless of social status.
   - Ability to comprehend accurately the needs and wishes of others

4. **Compassion**
   - Ability to provide professional non-discriminatory care, regardless of species.
   - Ability to recognise the interrelatedness of care-giving as a ‘win-win’ situation.

5. **Confidence**
   - Ability to possess dedication and determination without aggression or arrogance.
   - Ability to heighten a sense of dedication and determination in others.

6. **Creativity**
   - Ability to sublimate subconscious instincts with conscious aspirations.
   - Ability to assimilate individual needs with the collective group.

7. **Contentment**
   - Ability to distinguish physical, intellectual and emotional needs and wants.
   - Ability to integrate personal needs into a lifestyle compatible with health.
**Diagram 1. Seven aspects of professionalism**

<table>
<thead>
<tr>
<th>Positive displays (inter-consciousness)</th>
<th>Aspect</th>
<th>Negative displays (Ego) (Intra-consciousness)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual rigour, discernment of truth, wisdom Intellectual ‘warrior’</td>
<td>Cognition</td>
<td>Mental rigidity and stagnant thought patterns, Intellectual ‘worrier’</td>
</tr>
<tr>
<td>Seeing patterns in experiences, emotional skills, ‘us/us’, ‘win/win’</td>
<td>Clarity of vision</td>
<td>Self-absorption, confusion, narcissism, hedonism, ‘us/them’, ‘win/lose’</td>
</tr>
<tr>
<td>Self- and interpersonal dialogue skills ‘democratic listener’</td>
<td>Communication</td>
<td>Deafness (non-discernment), opinionated, and judging ‘judge and jury’</td>
</tr>
<tr>
<td>Love, ethical care, concern for others</td>
<td>Compassion</td>
<td>Disinterest in others and things outside own realm</td>
</tr>
<tr>
<td>Good self-esteem, resilience ‘fight the good fight’</td>
<td>Confidence</td>
<td>Loss of self-respect &amp; Arrogance ‘fight to the death’</td>
</tr>
<tr>
<td>Emotional curiosity and expressiveness, ‘prolific’</td>
<td>Creativity</td>
<td>Obsession with money, power and sex, ‘profligate’</td>
</tr>
<tr>
<td>Equanimity, sharing, lives in the present, ‘an oasis in the desert’</td>
<td>Contentment</td>
<td>Lethargy or fight/flight responses, living in the past or future ‘a hurricane’</td>
</tr>
</tbody>
</table>
Figure 2. The anatomy of the human mind: a cyclic continuum of ‘mindbody’.

CONSCIOUS MIND
mundane thoughts,
emotions & desires
dualistic discrimination
intellect

EGO
(Intraconscious mind)
(‘self’)
the ‘I’

INTER-
CONSCIOUS
MIND
(‘Self’)
Intuition
nondual-identity
interpersonality
collective
unconscious

PHYSICAL BODY
physical sensations
and feelings,
physical and physiological
reflexes

SUB-
CONSCIOUS MIND
self-preservation
instinctual urges (id)
imprints (superego),
memories &
psychological habits
Cognition (Knowledge)

| Ability to assimilate new ideas into an existing framework of knowledge |
| Ability to disseminate new knowledge with others |

‘However deep one’s knowledge of abstruse philosophy, it is like a piece of hair flying in the vastness of space; However important one’s experience in things worldly, it is like a drop of water thrown into an unfathomable abyss’

Zen saying

Definition:

Knowledge - an accumulation of data which provides effective action in a particular situation.
Wisdom - ability to use knowledge in practical situations

Brain power is a human specialty. It is what is unique to as in much the same way that dog’s have greater sense of smell, a cheetah can run fast and eagles have superior vision. Our intellect is however a tool with unknown and often unpredictable consequences. Take the classic example of how Thomas Hobbes became interested in philosophy. In the library one day, Hobbes came across a copy of Euclid’s *The Elements of Geometry*, which lay open at the forty-seventh theorem. Hobbes read the conclusions and declared that it was impossible. He then read the entire theorem, and it referred him to a previous theorem, and so on, until he had read back to Euclid’s set of axioms which he had to admit were so self-evident that he could not deny them. Thus reasoning alone had led Hobbes to accept a conclusion that, at first sight, he had rejected. Hobbes later applied similar deductive methods of reasoning in his greatest work *Leviathan*. It is said that though it took only one amateur to build the Ark, it took a whole team of professionals to build the Titanic. Likewise, knowledge in itself has never guaranteed success in any endeavour unless it is knowledge based firmly on experience. It is the ability to use knowledge in a systematic and practical way that empowers the user. It pays to remember that;

- All knowledge has primary, secondary or tertiary value
- All knowledge has emotional origins and destinations
- All knowledge is temporal and regional
- All knowledge which is in conflict contains deeper truths

It is easy to understand how knowledge can be valued as either primary (one plus one equals two), secondary (there are two apples before me) and tertiary (these two apples can be used for an apple pie). Most undergraduates would have primary (theoretical) knowledge. Most practising veterinarians have tertiary value – most highly valued socially.

If a picture is worth a thousand words, the practise of a skill replaces a thousand words also. When you know how to spay a dog, it replaces months of studying how to do it. What you know now is not only forgotten if not constantly used, but is altered or made redundant with emerging scientific findings (i.e. it is temporal). Most of what we now know will be no longer taught with much emphasis to our children’s generation at university. Remember that the entirety of civilisations’ knowledge up until the twentieth century is known by most children at year eight high school. Additionally, the knowledge we have may not be applicable in different geographical regions.

Perhaps the most important scientific discoveries occur where there is conflicting evidence. An overly simplified example of this is the two conflicting truths about milk feeding in neonates. Most
people know that milk is an important source of calcium for all young animals as a source of calcium. Most people also know that many orphan kittens and puppies get sick when fed cow’s milk. From these two conflicting truths, most people surmise a third truth which links the first two, namely the importance of species-specific milk composition, especially lactose content.

As we shall see in later chapters, conflicting evidence which obstructs the definition of a theory results in the emergence of a new hypothesis. Such an approach, termed Cartesian dualism, is critical for all scientific disciplines in order to analyse data which conflicts with known paradigms for how any system works. If there are no conflicts, any theory would work and a myriad fictional hypotheses are possible, one more fanciful than the other. Any writer will tell you that the difference between fiction and reality is that fiction has to make sense.

Self-knowledge is also a highly valued commodity. Once you know why a certain type of person always manages to bring out the worst in you and push all those buttons you try so hard to hide, you can begin to deconstruct those buttons, rather than trying to hide them. When you know why it is you can’t face going to work any more, you can enact changes in your physical environment rather than spending the rest of your working life denying your inner needs, experiencing chronic dissatisfaction and paying for it with disease, disability, divorce, or even death.

That knowledge could arise from an emotional source, be emotionally-laden or able to evoke an emotional response is clearly obvious. Recent studies in neurology tell us that the files contain not only data/information, but emotions as well. In a manner that is still partially unknown, the brain has the ability to store not only memories but emotions as well - as they occurred at the time the memory was made. Memory files thus contain two parts, the information about the event and the feeling we had at the time of the event. Put more simply:

\[
\text{Memory file = Information + Feelings at the time}
\]

A memory is stored in long-term storage or ‘dumped’ depending on its emotional value. From a neurological standpoint, emotions or concentration releases a chemical called calpain that stores the memory - basically ‘memorising’ the experience, including the details (who, what, where, when, etc.) and the emotion present at the time. This is why we can easily memorise information in an area of interest but have difficulty memorising dull or uninteresting topics. People with a ‘photographic memory’ are believed to have more of this brain chemical operating or have better control over the release of the chemical.

Nothing we know, from why the sun revolves around the planet to why we eat the food we do, arises spontaneously. All knowledge emerges from a necessity to resolve an emotional conflict (problem) with an individual or at a social level. In later chapters, we shall see how curiosity or creativity is an emotional activity. Consider Galileo’s affirmation of the Copernican heliocentric universe. To say the earth revolved around the sun evoked strong emotional responses from the Catholic church, threatened as they were by Galileo’s assertion that humans were no longer the centre of the universe. We could also consider the innovations in electrical, mechanical and nuclear technology during WWII (radar, H-bomb, jet rockets, etc) as a consequence of European and American fears of annihilation by German and Japanese forces. And it is not just socially-important knowledge that causes an emotional response. To a long time suffer of an undiagnosed illness, finally knowing what is wrong (i.e. obtaining a diagnosis) can have emotionally-liberating effects. Even humble mathematics we learn at school is emotionally-laden. If you think that one plus one is not void of emotions, think again. Studies in ‘fuzzy’ mathematics (nonlinear chaotic systems) which use Fibonacci integers has shown that one plus one can equal three, four or infinity.

When what we know as fact is cast into doubt, emotions have found their destination, and what emerges is heightened curiosity to resolve this emotional conflict. And if you think that this threatens your faith in what you know, consider the question whether there is a ‘you’ that knows what you think you know. To arrive at something of certainty, let us begin with doubting knowledge. And to doubt knowledge, we must first throw into question what the mind is.

The mind machine

*The superior person uses their mind like a mirror; it accepts all, reflects all, it receives, but does not keep.’*
Much has been written about what the mind is. It has been compared to a muscle and that even an intellectual weakling can, with enough nurturing and effort, attain high academic distinctions. The mind has also been described as a moat, which encircles the spirit of who we are, and that even a great intellect cannot explain why one person becomes a surgeon and another a sailor. Knowledge is also often mistaken for intelligence. This is like mistaking a cup of milk for a cow.

Our traditional understanding of how the mind works was based on Cartesian dualism – proposed by Rene Descartes, who believed that a soul interacts with the brain through the pineal gland.

‘As to the fact that there can be nothing in the mind, in so far as it is a thinking-thing, of which it is not aware, this seems to me to be self-evident. For there is nothing that we can understand to be in the mind, regarded in this way, that is not a thought or dependent on a thought. If it were not a thinking thing; and we cannot have any thought of which we are not aware at the very moment when it is in us. In view of this, I do not doubt that the mind begins to think as soon as it is implanted in the body of an infant, and it is immediately aware of its thoughts, even though it does not remember this afterwards because of the impressions of these thought do not remain in the memory.’

The consensus amongst modern western philosophers is that the mind is the brain. But understanding that the mind is an emergent function of the brain has not made it any easier to understand what it is. The nature of mind varies from East to West. Western minds are traditionally analytical, discriminative, inductive, individualistic, intellectual, objective, impersonal and self-assertive. The eastern mind, on the other hand is generally synthetic, totalising, integrative, nondiscriminative, deductive, nonsystematic, dogmatic, intuitive, nondiscursive, subjective and socially group-minded. This makes generalising about the mind even more difficult if culture has such a profound effect on the way individuals think.

If anything, who we are becomes less clear the more science delves into that darkest of all universes - the mind. The mind ordinarily thinks in black and white, yes or no – fight or flight, etc. Such dichotomous thinking is the natural human tendency. This is the way most people’s thought processes have evolved. Although it is natural, dichotomous thinking can be simplistic and may lead to a lack of consideration of alternatives. Adaptation and survival in today’s world requires complex ways of thinking. Thus, dichotomous thinking has been extended to dialectical (contradictory ideas) modes of thinking, where contradictory truths can leads to a third conclusion previously unconsidered.

Evolutionary psychology treats our mental capacities, inclinations, and desires as adaptations developed in the last two million years since the Pleistocene era. These features of the mind were fully developed in their modern form by about 10,000 years ago, the beginning of the Holocene, the period that saw the introduction of agriculture and cities, and the development of writing and metal tools. Since then, the human brain has not significantly changed in its genetic character. Rather than regarding the mind at birth as a content-free blank slate on which are inscribed the skills and values of the culture of an individual, evolutionary psychology posits the existence of innate interests, capacities, and tastes, laid down through processes of natural and sexual selection. Evolutionary psychology replaces the blank slate as a metaphor for mind with the Swiss army knife: the mind is a set of tools and capacities specifically adapted to important tasks and interests. These acquisitions are adaptations to life in the small hunter-gatherer bands in which our ancestors lived for 100,000 generations before civilisation as we now understand it began. They include a long list of universal features of the Stone Age, hunter-gatherer mind: for example language use according to syntactic rules; kinship systems with incest avoidance; phobias, e.g. fear of snakes and spiders; child-nurturing interests; nepotism, the favouring of blood relations; a sense of justice, fairness, and obligations associated with emotions of anger and revenge; the capacity to make and use hand tools; status and rank ordering in human relations; a sense of food purity and contamination; and so forth.

Freud said that we are all conscious of only ten percent of what is actually going on in our brains. But consciousness is an uncertain scientific phenomenon. Certain brain regions seem to be necessary for conscious awareness. The thalamus is crucial for awareness of information received by the sense, apart from smell. The left temporal lobe is also an important part. The elements of individual consciousness do not normally reflect the observable reality that can be detected by another person. There is no way of proving that your perception of the colour red is the same as mine. This is merely a convention of collective consciousness. Individual’s synaptic networks are shaped by experience and it
may be that the brain, when under stress, releases or revamps its hard-wired ‘realities’ to conform with the newer paradigms it is forced to adapt to. Edwin Weinstein, an American psycholinguist relates its thus:

‘Patients with enduring explicit verbal denial were described by relatives and colleagues as having been conscientious, highly work-oriented, orderly, disciplined people. They were considered to have been stubborn and rigid, with a need to be ‘right’, with a concern for ‘principles’. They were regarded as having great will-power and believed that the flesh was the servant of the spirit. When they then had to experience their own illness and incapacity, it was seen as a failure and weakness, involving a loss of integrity and prestige. They were regarded as not empathetic and as reserved rather than emotional. They believe that good health and success in life depended on following the rules for right living.’

Thus, consciousness depends on pre-stress personality and on the meaning of the stress in terms of past experience. Any psychiatrist will tell you that a rigid mental stance that cannot bend, will surely break under stress. Intellectual rigour must not be confused with intellectual rigidity. Resilience of mind, being able to self-monitor, self-manage and self-modify allows us to adapt to the unexpected, regardless of its magnitude or pervasiveness, ultimately ensuring a flexibility of synaptic networks and long term sanity.

After exhaustive study in his field of psychiatry, Antonio Damasio concludes that the neural correlates for consciousness are as elusive as the definition of consciousness. He identifies what he calls core consciousness, which is ‘about one moment – now – one place – here’ and is the rite of passage into the extended consciousness, in which ‘both past and the anticipated future are sensed along with the here and now in a sweeping vista as far-ranging as an epic novel.’ We might be able to write a book about our past, but only in the present moment can we relive it.

Anatomy of the mind

‘It is better to deal with an intelligent devil than a good natured idiot.’

Czesław Miłosz

Sufficient evidence now exists to affirm that the mind is fluid in nature (adaptation) and capable of expansion (growth). It has been shown that feelings which are generated by someone have a direct influence on their brain and body, and vice versa the body/brain state influences moods – what has been termed an upward and downward causation of brain and mind. Our higher level thoughts can change our brain and body functions, but the these functions (thoughts) are still emergent properties of the brain.

What then constitutes human consciousness? How does this differ from other animals? In Western society, we have a consensus on one necessary condition for human life and that is the capacity for conscious experience. When we consider the whole brain formulation of death where there is a permanent loss of the capacity for conscious experience, the person is no longer human and relegated to a purely vegetative (nonhuman) state. That is, a vegetative human has an equivalent moral status of a nonhuman animal. This suggests that what is essential to being a human being is living the life of a person, which derives from the capacity for conscious experience, an experience not alien to animals.

The first step up the intellectual tree from a vegetable state is what’s called a state of sentience. Any sentient animal must be able to sense and feel. There is no implication of mental perceptions or abstraction, although humans are said to be sentient, so in some cases, it can be implied. What is implicit in sentience is that the animal has a nervous system which can pick up stimuli from outside the animal’s body and relay those signals to a central ‘brain’ where it is processed. Sentience does not infer consciousness – it merely implies an ability to feel pleasure and pain. But having such an ability does not mean such an animal is inferior morally. If it were true, then using this very same argument, we could say, for example, that a human is inferior to a bat, because humans cannot echolocate, or humans are inferior to dogs because humans have such a relatively poor ability to smell. Thus, senses and feeling are all that are required to categorise an animal as sentient. And senses and feelings can be detected scientific with fairly standards methods – blood tests, EMG, EEG, etc. Scientists are more categorical in their definition of sentience than I have so far depicted. To be more specific, three criteria are said to be essential for what constitutes sentience:
Self-awareness - a layered construct of spontaneous consciousness that integrates sensory stimuli (smell, taste, touch, etc), conceptual ideas associated with these sensations (feelings, moods, drives, motivations, etc), and social sensations (group bonding, pecking order, social status/pride, etc). Consciousness is on a holographic paradigm of internal imagery based on the external world. (An example could be; 'I see a snake. I am aware of the snake’s presence in relation to my own presence. It is definitely a snake. It is not for example, a rope.)

Self-preservation - essential for the preservation and continuity of the species. This manifests individually as maximising and maintaining self-fitness (i.e. physical health), and maximising chances of reproduction (i.e. use of available resources). Inherent in the conceptualising of self-preservation is the notion of self-mortality, or the capacity to die. This necessarily implies a sense of 'Self', the existence of an 'I', or ego. Self-preservation urges sometimes overridden by hierarchal needs (e.g. mass suicide of lemmings, kamikaze pilots, etc). Self-preservation expresses individually as both overt and subtle fears of death. (An example could be; I see a snake. I know snakes can kill me. I must take steps to avoid being killed by the snake.)

Self-heurism (ability to learn) - easily replicated in computers, it defines an ability to interpret new experiences outside what is already known allows for adaptation. In animals, heurism closely allied to self-awareness and self-preservation in order to foster greater learning skills. (An example could be; I have just escaped from a snake. I must avoid all snakes in the future.)

The degrees to which animals express these levels of sentience vary amongst species and individuals. An ability to learn is greater in humans compared with rats, and we are also able to sublimate our instinctual needs (such as reproduction) and even override the instinct of self-preservation (e.g. suicide). It is a curiosity that peoples with heightened senses of not only self-preservation but also non-self preservation (i.e. their immediate family, friends, and even larger groups or society in general) are praised over others. An example of this are those who work tirelessly for the benefit of others.

Consciousness, a different kettle of fish altogether, is believed to be ‘constructed’ from five aggregate parts:

- sensations (smell, taste, touch, sound, sight and awareness)
- intentions (motivation, will power, imagination)
- discriminations or ego (recognition and labelling of objects & concepts)
- feelings (emotions)
- attentions (concentration)

In anything that has consciousness, they have experiences of physical and mental sensations, they react to their environment through volitional intention or will, which results in positive, negative or neutral states that evoke recognition and labelling of their environment. The reality of an object and its perception is relative to the viewer. For example, the way your partner perceives you is different from how a postman, a neighbour, a creditor or even an enemy might perceive you. It is futile to argue that there is no tree if no one hears it fall in the forest. We all know it is there. What is more important is that we realise that our mental labels on things and people are not necessary the right label, and we should therefore respect all things. It is important to realise that many spiritualists, regardless of their religious background, contend that it is vitally important to not hate an enemy since they may in fact be a future friend and vice versa. As well, a stranger may be a friend we are yet to meet. To label people as either good for us, bad for us or unimportant is to imprison ourselves within a rigid ego that denies emotional clarity, restricts mental openness and limits compassionate practice.

Motivation is implicit in effectively working as a veterinarian. If we go to work merely to pay the bills, it is impossible to feel good about it. If we are bitter about helping animals and their owners, it is like adding salt to water – eventually all the water becomes salty - and everything we do at work becomes unpalatable. But if we motivate ourselves to spend a small amount of our day in helping to alleviate the suffering of animals, an emotional resonance occurs and we feel better for it not just at the time, but often for the rest of the day. It is easy to see the benefits of this in professionals who perform a small amount of pro bono work. Whether you are a vet, doctor or carpenter, this humble offering generates tremendous respect from clients and for yourself, be it just from providing the occasional discounted (or free) consultation or advice over the phone. The benefits far outweigh the perceived loss in income by stimulating client loyalty and subtly boosting word-of-mouth advertising.

An ability to alter our perception of the environment (develop an opinion) is called...
concentration and is the final part of being conscious. By analogy, if our intention or motivation can be compared to a horse, our attention (concentration) can be compared to the reins. Some humans can be compared to overweight ponies with large reins (mentally sluggish and rigid) while others are more like Arab stallions with no reins (flighty and unrestrained). Not only that, each of us can vary from one state to another depending on our degree of emotional agitation. One can also conclude that not just humans, but all animals, have a consciousness with varying degrees of sensual awareness, intentions, emotional states, conceptual discrimination and powers of attention. Obviously species variations in consciousness affect the depth and degree of interplay amongst these mental attributes.

All which we perceive through our senses becomes assimilated with our existing experiences. That results from this is what is known as a perceptive dualism – we see things from an object/subject point of view. Our discriminatory powers are essential for survival and as we shall see later, are also the basis for the formation of our ego. How dualism works is very simple, although its results are excruciatingly complex. Let us for example consider the concept of ‘beauty.’ When we see something before us that is beautiful, for example a rose, someone of the opposite sex or even an idea, we have an immediate reaction to it. This reaction in our mind (as represented by the lines coming out of the prism) is one of three types; attraction, repulsion or confusion. The vision of beauty reflects in our mind as something ‘out there’ which is separate from us. Being separate from us, we feel attraction, repulsion or confusion and this propels us to action. This action (in Sanskrit, karma) is self-propelled by us and is not externally motivated or driven. This action is the basis upon which all life propagates. Attraction moves us to beautiful things, and repulsion moves us away from things we perceive as ugly. Confusion leaves us undecided about something until we experience it further, until sooner or later we decide our preferences for the object and then have either an attractant or repellent reaction to it. The primary origin of all emotions then, can be surmised as being from a mental perception that everything outside of ourselves is separate from us and because of this perceived separation, the beginnings of dualism as a paradigm of thinking emerges. Dualism is where all conscious feelings, motivations, concepts, and ultimately, emotions, arise. This will be discussed in detail later on, but the diagram below may help simplify this idea.

When this action occurs as a consequence of an externally perceived object, it is not hard to see the implications of the action when the object is another person. Obviously inanimate objects do not respond to our actions, no more than a rock cares if we hit it or not. When the object of our affections is a person, a similar action is elicited in them. They respond with either attraction, repulsion or confusion. Within a very short time, a fission-like reaction occurs across the planet. People fall in love, go to war or remained confused about the whole affair. It has been calculated that of the three basic responses shown in the diagram, approximately 84,000 emotions are possible, so it isn’t surprising why relationships become so complex, and how our emotions become so intertwined with other’s. It seems naïve to post blame to one person in a relationship when nothing is more complex than the anatomy of emotions. As they say, it takes two to tangle.

But as in any equation, there is always an equal sign. The opposite way of thinking things dualistically is seeing things as they are, as being ‘perfect’ or not needing to have this perfection as a part of ourselves. This is what is called nondual thinking. The search for individual union (whether we call it a partner, soulmate, etc) is a search for that part of ourselves we believe exists outside our mind. However, union assumes things are first separate and then meet and meld, whereas nondual perception implies no inherent separation to begin with. Seeing things in a nondual way does not mean to give up a spouse or give up the search for a soulmate, because none of us are capable of being perfectly nondual in outlook. It is only an idealised scenario, and the explanation is given to exemplify where it is we sometimes go wrong with our perception of what reality is and isn’t.
Gary Zukav, a renowned philosopher and author of the classic physics book *The Dancing Wu Li Masters*, considers that the mind's perception of reality is not what exactly what it apprehends, yet it also is.

‘Reality is what we take to be true, what we take to be true is what we believe, what we believe is based upon our perceptions, what we perceive depends upon what we look for, what we look for depends upon what we think, what we think depends upon what we perceive, what we perceive determines what we believe, what we believe determines what we take to be true, what we take to be true is our reality’.

This is a roundabout way of saying that reality is what we want it to be. When scientists of old were stumped by how something worked, they began by dissecting its inner working. In order to understand any subject, firstly it has to categorised, classified, systematised. To do this, formalin jars were opened, boning knives wetted, gloves donned and microscopes warmed. And a whole series of dramas would unfold as theatrical as *ER*. The mind, however, isn't embodied by flesh. It can't be dissected. It is like trying to understand a film by dissecting a cinema screen. The mind can only be comprehended by the responses it produces; actions. Thus, psychoanalysis' greatest achievement in the twentieth century was to begin the arduous task of sketching the mind’s inner workings – how it 'appears' to work. Thus emerged the concepts of mind, ego, neuroses and complexes, which tell us what we are, and why and how, but not necessarily what we can do about it. Assimilating what was known from 2,500 years of eastern psychological study, modern psychoanalysis and recent advances in neurophysiology has given us a small handle on how the human mind operates. Lets us begin first with that small word 'ego' which Sigmund Freud coined long ago.

**The anatomy of the ego**

*You cannot get it by taking thought; You cannot seek it by not taking thought.*

Zen saying

The ego refers to the conscious mind - the conscious ‘I’ who reads, thinks and develops an opinion about what is written in this book. Though the ego refers to the conscious mind, it is not solely a product of the conscious mind, but also of other facets of the mind, including the subconscious mind, interconscious mind and the body. It is a creation of conscious experiences of the physical environment from birth to the present day.

The diagram at the beginning of this section shows how the ego (the *intraconscious* mind or ‘self’) is central on the hub of the mindbody continuum. That it is intra-conscious refers to it having an inward or self-referencing/self-reflective quality. This distinguishes the ego from the *interconscious* mind (also called ‘Self’ – capital ‘S’ - in Jungian psychology), which is the intuitive, nondual and interpersonal aspects of our mind. The mind is an incredibly complex phenomenon and my simplifications in the diagram do only some justice to the inordinate time spent by many psychiatrists and philosophers to
plumb the depth of human psychology. Nevertheless, we do know that the subconscious mind is responsible for the collection of all our asocial and amoral urges, imprints and instincts (the Id) that underlies and motivates all psychic activity. The subconscious is also self-regulating and down-regulating by imprints from parental and social influences and learned traits (the Superego). The subconscious operates under the domain of primitive urges, preaching an ‘an eye for an eye’ and whines ‘this is mine.’ The subconscious is formed anatomically by connections residing in the evolutionary midbrain (diencephalon), but interconnects with most parts of the brain. Because it is a primordial construct of the mind, the subconscious forms well before any social or moral concepts emerge. Thus the subconscious should not be perceived as being cruel, rather primitive or basic. Its demands are not that complex - it only requires satisfaction of some basic needs. To achieve these ends, it makes us eat, seek shelter, have sex and form friendships bonds to further its own survival.

Without down-regulation by the Superego (our ‘conscience’), our subconscious would let us wantonly sleep with whomever we chose, kill another if it allowed us to gain what we wanted, or steal if we couldn’t obtain what we desired. The Superego is the governor of the subconscious, so to speak. It controls what we do, yet is still part of the subconscious itself. The Superego allows us to still seek satisfaction, albeit in more socially accepted ways. The Superego and the Id are in a constant flux within the subconscious mind. Do I help this person or do I do away with them? I’d like to steal this bracelet but what will people think if I’m caught? These questions and millions more arise as the instincts of the subconscious Id struggles with the subconscious Superego and the conscious mind to find satisfaction. The subconscious Id has no morals per se. That is not to say it is evil, merely that its primary function is to ensure perpetuation of the individual at its most basal level – self-survival. The superego is evident in nearly all social animals, where we see social etiquette limiting individual behaviour. It is unknown whether the superego is fully functional in black widow spiders who eat their mates, but it is arguable that the urge to consume their sexual partners is due to an overwhelming demand for protein necessary for egg-laying post-coitus and that at other times the superego may well be sufficient. No research in this area is evident – do biologists really care for black widow’s Id? - nor is there any research proposed or expected in the near future.

The interconscious mind (or ‘Self’) forms during childhood. It appears to be a subtle construct of the mind and is extremely fragile, sensitive and potent. The ‘Self’ is also subject to cultural influences so that the perception of Self varies according to different cultures. As well, Self is anatomically amorphic (i.e. no specific part of the brain is responsible for its function), unlike the ego (self) which can be seriously affected by brain injury. Studies with epileptic patients with a ‘split-brain’ operation, or the psychiatric cases of double personality or multiple personality disorders show a remarkably intact Self. The subconscious should not be perceived as being cruel, rather primitive or basic. Its demands are not that complex - it only requires satisfaction of some basic needs. To achieve these ends, it makes us eat, seek shelter, have sex and form friendships bonds to further its own survival.

We learn to use our interconscious mind by navigating our way through the maze of interpersonal interactions with parents, family, friends and others. The interconscious mind is that part which embraces social skills and yearns for integration into society, where it can explore greater methods of self-expression. The interconscious mind envelops and produces heroism, altruism, oratory skills, diplomacy and emotional intelligence quotient (EQ). Essentially all the interpersonal skills. The ‘Self’ is the party-animal aspect of us all. It is that part of us which seek union with others to mate, to play, to bond as a group, to seek fame and fortune from others, to use others for our own pleasures, praise and gain. It is not an inherently ‘spiritual’ quality, no more than a politician is necessarily spiritual. But the interconscious mind is an essential survival tool (‘safety in numbers’) as well as an outlet of psychological frustration and thus allows healthy psychological growth. In humans, an inability to bond adequately at a social level would be an impediment to healthy emotional expression. Although the rare few can survive in solitude, the majority of animals are seriously restricted by lack of social interactions and many, if not all, humans consider this the worst form of torture.

The conscious mind is the part of our mind that reads this book, that discerns letters on the page, that perceives patterns in words and assimilates them into sentences and assigns abstract meanings to them through intellectual methods. It is the more computer-like of any part of our mind. It deals best with non-emotional information, and deals poorly when information comes to it heavily-laden with emotions. It is the seat of the IQ, and the weakest link in our emotional competence.

The final influence on the ego is the physical body. The physical body and the mind have intimate connections. When a loved one walks into a room, and we have not seen them for a long time, our
heart races, our pupil dilates and our skin flushes. Our mind becomes overwhelmed with feelings. We
cry, we laugh. We lose our rationality for a time. To think the body cannot control the mind or that
they are inseparable is naïve. There is also the more subtle and less conscious interplays between mind
and body via hormones and the parasympathetic nervous system. As well, the mind can directly
influence the body, such as over-secretion of gut acids, hypertension and immunosuppression in
chronic stress situations.

Having said all this, where does the ego come into the equation? The ego is the nexus of all four
parts; the body and the subconscious, conscious and interconscious minds. It is the hub of the wheel. It
doesn’t so much turn the wheel but becomes the wheel, when it is in motion. The ego gives us our
sense of Self which arises temporally, from one moment to the next, as the ‘I’. It is the synthesis of all
aspects of the mind in ‘action’ over time. Peter Singer stressed this capacity of animals to have a sense
of Self over time that was crucial for their determination as having a moral equivalence to humans. The
ego is the instrument to voice the many demands made by the body, the subconscious mind, the
conscious mind and the intraconscious mind. All animals have a functional ego. It is not hard to see
this when we consider a socially-challenged Chihuahua who takes exception to being examined by the
vet or in the docile Labrador that wags its tail despite painful procedures performed on it. Whether a
dog is extrovert, introvert, aggressive or passive, its personality is a function of ego. The only life forms
which lack an ego are those which lack consciousness. For example, this would include plants,
anencephalics, animals (including humans) in a vegetative brain-state post-trauma and lower life forms
such as single-celled organisms, bivalves, molluscs and second-hand car salesman.

The ego is thus the sum of all the mind’s faculties. It is the ‘I’ that feels pain in the body, that has
the urge to find a partner and marry, that seeks the company of like-minded souls and joins Rotary
international or the local bowls club. It is the ‘I’ that loves solving the crosswords and wondering why it
never spoke out against the damming of the Franklin River. It is the ‘I’ that condemns racism but
shrugs the street pauper when asked for a dime. It is the ‘I’ that does all our most noblest of deeds and
most ignoble of sins. It pinions our mind upon high to contemplate God and also seethes restlessly to
seek revenge against our neighbour. It blinds us to our highest potential and pulls us short of enacting
the greatest love of all, self-sacrifice. It is at this point in our discussion about the ‘I’ that religious
readers might infer something more, that the ‘I’ is greater than the sum of its anatomical parts. That
there might be a soul or spirit behind the mind’s workings, to that I can only say read on…

Our ego begins its first spurt of growth at the age of eighteen months of age or thereabouts when
we first look at ourselves in the mirror. It is the conscious mind’s first grasping of self-awareness, albeit
the most limited form, an image of itself reflected in a Barbie-doll mirror. The baby recognises itself. At
this age, we say ‘That is me,’ pointing to the mirror. We smile at the image of ourselves. We touch the
mirror and confirm it is us and not our clone or twin, or a trick of magic. As a result, we enter the
domain of existential solipsism and narcissism, Freud’s anal stage of development. We discover ourself
by touching, exploring, pleasing, hurting. Then we move beyond ourselves and see what this body of
ours can do to objects around us. We crash into things, hurt them, get hurt ourselves. We push toys
around. We pull the cat’s tail, get scratched. We cry. We laugh as mother rescues us from our pain. We
sleep, exhausted. We find, when awakening from sleep, the ‘I’ is still there. It has survived the death of
sleep. Thus begins the slow growth of our beautiful ego that we show to the world on our Bar Mitzvah,
our Debutante night, or our graduation day. We smile for the camera. We pride ourselves on our
achievements. We are ultimately deluded that this thing we see with our eyes is the real ‘me.’ We want
to believe that everything is perfect, that we are perfect. If it’s not perfect, we know we will find a way
to make it so, and if we can’t then we’ll make a way.

It is important to remember that in order to maintain itself, the ego must constantly establish and
protect its physical and psychic boundaries from others. A sense of duality is where the ego was born,
and it is how the ego is maintained. An ego is never threatened by inanimate objects, only animate ones.
This is why interacting with others is so critical for proper ego development. Without the constant
pushing and pulling between our ego and others, the ego is unable to define an ‘ego body’ or
boundaries, or what has been popularly called one’s personal space. Without constant external conflicts
by relating with others, the ego becomes deformed or malformed - it becomes unsure of who and
where it is. A blurring of object/subject occurs and the ego is thrown into crisis. We can see this in the
aberrant ego bodies of orphaned children who are deprived of interactions with their family; thwarted,
stunted egos unable or reluctant to touch, cry, laugh or even smile.

The ego needs to continually reinforce its boundaries by bonds and conflicts. The greatest
defining forces on the ego are those who evoke within the ego the feelings of love and hate. By such interactions, the ego forms its rudimentary construct of good and bad, pleasure and pain, friend and enemy, ‘us and them’. Without an ego, we cannot survive. In primitive times, humans had to quickly discern a would-be enemy who might be out to attack them. The ego would pick up vital body language cues that were tell-tales signs of imminent friendship or hostility. This is critical stuff for survival, and is how the ego has evolved from prehistoric times. Without an ego, other humans or animals would kill us, or at least walk over us. Our needs wouldn’t be met. Without an ego, who would feed us when we cry, or change our nappy?

How do we know when we are operating from the perspective of our ego? Put simply, any time we are concerned with our self-image, with self-pity or with negativity, we can be assured this is the ego operating. These three negative aspects of the ego emerge when an individual becomes overzealous in their self-interest at the expense of others. One can be assured that excessive egoism is operating when any of these aspects are present. Self-image is excessive concern for how one looks physically, or how one appears socially. Self-image is however different to self-esteem. One can have high self-esteem with little interest in how one appears. Self-pity arises whenever one feels physically or emotional threatened or injured. It is normal to be aware of self-injuries, but not to the point of being self-obsessed. Negativity is the third and important aspect of egoism. Being negative or pessimistic of others or things is a defence to maintaining one’s own self-image. Ultimately, negativity is destructive to our emotions and ultimately our relationships with others. Negative people become a ‘drain’ to be around, and are best left to their own self-destructive tendencies.

In exchange for its constant demands to protect us from the myriad slings and arrows of outrageous fortune that life throws us, the ego gives us security, a place to crash and food in our belly and sex. It also gives us the skills of diplomacy and tact that allow us to preen the egos of others in order to share a crowded winter cave with other potentially hostile companions. The subconscious compromises with the interconscious mind to allow us to share food with others, to find a satisfactory mate that others in the social group approve of, and allows us to sleep knowing that we have found sufficient food to last the winter. The ego is perhaps the finest mechanism ever invented by evolution. It does for the mind what the immune system does for the body. It fights our wars, maintains our integrity. It is as unerring as the heart, and as reflexive as a knee-jerk. It is as impulsive as an erection, as explosive as an orgasm, and about as demanding and unpredictable as a cramp. It is intimately perceptive to the needs of those parts of the mind it serves, and incredibly subtle at orchestrating the myriad needs of body, subconscious, conscious and interconscious minds.

The three negative aspects of the ego:
- self-image
- self-pity
- negativity

The greatest trick the ego ever learnt was to convince us that it exists.

The ‘I’ is the ego – the ‘I’ is the sum of the four aspects of mind – but it is essentially a mirage, or illusion. Though it is critical to fully understand how the ego works, ultimately it is more important to realise that it is just a product of the mind. But before the reader grows hopelessly despondent with this revelation, let us step back a few paces. As was said previously, the ego is one of the finest products of evolution. It is so smooth in operating that when it works properly, we are not aware of it. The only time we are aware of it is when we are in a crisis of conflicting urges. We might want to kill someone because they have wronged us, but we know that we cannot, or should not, or are unable to. Or in another circumstance, we might want to flee from an unsavoury circumstance yet know we must stand and fight. Fortunately for us ‘civilised’ folk, these conflicts ‘to be or not to be’, or ‘to flee or not to flee’ are regular conflicts which the ego deals with aplomb. It is hard to rattle a mature ego. Don’t forget, it has dealt with the hardest time of all – growing up! It has seen childhood wars on the playground, witnessed titanic excursions into the deep ends of swimming pools when learning to swim, and undergone the brave foray of swallowing tadpoles as part of adolescent initiations. It has seen our
Odyssean struggles with the sirens of puberty and overcoming onanism. It has gold medals pinned to itself for overcoming subconscious fears that would make Schwarzenegger proud. It is only when we dare to challenge the ego’s authority that the proverbial hits the fan. Conflicts, especially prolonged mental conflict, are what makes for good ego drama. Such ‘dark nights of the soul’ occur when we are forced to endure what our ego considers unreasonable. These might include death of a loved one, victory by an enemy, divorce, bankruptcy, imprisonment, becoming maimed or disabled, raped, tortured, etc. Individual egos react differently, depending on their resilience, but none are immune.

The ego during this crisis period is said to ‘wobble’ or becomes unstable. Everything appears out of kilter. ‘The world is out of joint,’ said Shakespeare. The Buddhist use the word samsara which describes a universe ‘out of sync’ or unstable, and this is similar to what is involved during an ego crisis. If the ego cannot accommodate the new experiences – if it can’t swallow the bitter pill of a new reality forced upon it - it remains unbalanced and the proper communication between body, subconscious, conscious and interconscious minds become distorted. We say things like ‘I can’t live with myself!’ not realising that the ‘myself’ we are talking about is the ego – that it is our ego that we can’t live with. We go crazy - doing irrational acts of transferred rage and hysteria directed at everything and everyone - and for a while our world is turned upside down. As a consequence of unresolved ego crisis, people have nervous breakdowns, suffer serious illness, or check into rehab. The wards of psychiatric hospitals are replete with those unable to re-centre their ego and keep the wheels of the mind smoothly turning.

The ego maintains its boundaries by constant separation from external subjects; via judgements, conflicts, an ‘us-them’ attitude.

As we have already said, the ego arises at birth and has at that time only one overriding motivation - hunger - to reach to the breast and suckle, or in egg-laying animals, to find food. In mammals, bonding with a parent(s) is crucial for ego development. As we have seen, the ego begins to form by conflict over physical needs. A hungry baby that cries out has its needs (and ego) satisfied when fed by its mother. Some psychologists believe that this primal movement toward the breast is one of love, but without trying to sound trite, what's love got to do with it? An infant’s search for the breast is simply an instinctual urge to feed. It is an instinct, not an emotion. The emotion ‘love’ arises secondarily to the urge, through bonding with the mother. It is only in conflict, between needs and having them met or not, where emotions arise, but this is discussed in more detail in the next chapter. Suffice to say, where there are no emotions, there is only needs. And where there are no needs, there is only awareness. But this too is discussed later.

As the individual grows, the requirements of the subconscious and conscious minds grow more complex and their demands create not only physical but also emotional (‘I need praise’) and mental (‘I need acceptance, attention, agreement from others’) needs. To grow, the ego separates itself from its maternal bond by creating, as already said, its own ego body. This ego body (our image of our physical Self, what we see in the mirror with our mind’s eye) is a mental chimera that exists through separation (‘I need that object/person in order to be happy’) in time (‘I will only be happy when this or that happens’). Thus the ego is a four-dimensional persona we have of ourselves in time and space. We can experiment about what or where is the ego body by asking yourself what part of your body is the real you? Is it your arm, or your leg, or your brain, or your heart? Is it one or multiples, or all? Many philosophers, from the Buddha to Bart Simpson, have pondered this eternal question - Who am I? Whatever the truth to this puzzle, the ego quickly learns that in order to survive I has to convince us that it is real and that we and it are the same thing. Why should it do this, you ask? Quite simply, for its, and therefore our, survival. The ego is our body guard, our chaperone, the concierge in the lobby of our mind, our pal. But if we choose to ask the ego to step aside, it is like asking a dog to let go of a bone – a fight is what normally happens.

‘I think, therefore I am’ implies complicity in the belief that ‘I’ only exit when I think, and therefore I and my ego are one and the same, whereas in truth we are everything except who we think we are. But that doesn’t not mean that we are nothing without our ego-derived thoughts. There is a subtle difference between thinking and awareness; the former requires cognitive actions, whereas the latter does not. Antonio Damasio, a well respected American psychiatrist, coined the term ‘Descartes’ error’ to describe the flawed notion that we are the sum of our thoughts and that we identify ourselves the ‘I’ with these thoughts. That we may be greater than the sum of our thoughts is, he suggests, a little
The vitality and creativity of an adult person depends on the quality of the dialogue between the ego and the Self. This dialogue develops from childhood usually by the parental mother acting as a mirror for the creation of the child’s ego. The ego establishes itself first by mirroring, then establishing independence from the mother. This egocentric stage is essential for the infant’s ego to form an identity that is separate from the external world, and to thus to form ego boundaries (what have been coined ‘virtual reality’ paradigms) and for symbolic play. Maternal care allows the ego to be projected on to the infant’s body; an ego-self dialogue then develops its roots in the bodily experience of the infant as it interacts with the world and consequently, the ego body is born.

Ego development can be compromised as a result of early overstimulation in childhood or inadequate or inconsistent caring by parent(s). Post-natal depression, marital disharmony, drug/alcohol and physical and mental abuse also cause major distortions in the establishment of the ego-self dialogue and ego boundaries and contributes to unhealthy ego boundaries later in life. Poor ego development can also lead to body-image distortions and difficulties in the regulation of tension and stress, resulting in such symptomatic expressions as eating disorders, compulsive exercise, substance abuse, and the creation of physical danger, as a step toward integration of mind and body as well as a defensive antidote to pain. Unresolved childhood trauma results in various degrees of ‘ego-grasping’ which manifests along a continuum of irritability, anger, depression, low levels of impulse control, distortions in reality perception and extensive operation of immature defence mechanisms.

Developmentally, the body and the ego have an integral, mutual relationship. This becomes particularly important during adolescence when the body matures physically while at the same time cognition, self-reflection, and social relations develop. A subtle part of the ego which appears around adolescence is what is called the archaic or primordial layer of the ego. This archaic layer appears to shine through the basic fault in the psyche opened by childhood trauma. This inner Self (what has been referred to as the ‘guardian angel’) appears to form in many traumatic situations as a buffer for the ego against total annihilation. This led many psychoanalysts like Jung and Ferenczi to hypothesise about a spiritual (non-physical) Self which is indestructible, regardless of internal or external trauma. It may well be that this inner sanctuary links the ego-experience with a spiritual aspect of the mind not ordinarily available to consciousness.

What is most interesting about the ego’s development is that its maturation is not a temporal phenomenon (i.e. age does not normally infer ego maturity). The development of verbal, social, and adaptive skills over time is not as pivotal to ego maturation as is overcoming psychological trauma. Examples from experiences of entry into adulthood in societies where initiation rites (rites of passage) are still practised (e.g. participating in inter-tribal wars, virginal deflowering by elders, ritual male circumcision) results in more rapid ego maturity. Rites of passage are emotionally-intense rituals which are designed to transform the belief systems of individuals. These rites are performed at important stages of an individual’s life, such as puberty, marriage, birth of children, old age and dying. Typically the rites of passage begin by separating the person from their social network. Without the accustomed social support they begin to feel fear, especially fear of the unknown. They are then taught their society’s mythology by the presiding elder. In the second stage of the ritual they begin to undergo intense emotional experiences and learn to interpret them according to their society’s values. Sometimes psychedelic drugs are used. The individual then begins to mourn the loss of their grandiose sense of self, which leads to the formation of a more mature and realistic self-image. Finally the individual constructs a new conceptual world-view and is re-integrated into his community. However, such rites of passage do not necessarily confer individual ego maturity – merely the ego’s social maturity. Notwithstanding this, many contemporary psychoanalysts associate rites of passage akin to what the Spanish mystic John of the Cross described as the ‘dark night of the soul,’ which is commonly experienced by individuals whose ego is in major crisis. The moments when we are stripped bare of our illusions and confront the realities of our existence, we introduce important questions: Who am I? What is my purpose here? Where am I going? Jung believed these questions important in one’s development toward self-discovery.
All human religions/philosophies can either hinder the maturation of the ego or result in ego maladaptation/malaise. In societies where rite of passage is practiced, the death-rebirth struggle is a part of the psychological transformation. During this process, enormous amounts of destructive and sexual material rise into consciousness. Immature and sorrowful beliefs and attitudes, buried in the subconscious mind since childhood, are re-experienced. When the youth successfully assimilates this stage, they pass into transpersonal experiences of bliss, cosmic unity, or other features of higher consciousness\(^\text{134}\). The rite of passage at adolescence is a process about learning to overcome and sublimate infancy trauma by symbolic death. Their rebirth is a symbolic birth of a ‘new’ ego with beliefs that are now harmonious towards their society. The death and rebirth scenario is actually the death and rebirth of belief systems, so that the ego completely re-orientates itself to a new system of values\(^\text{135}\).

Such trauma can be precipitated in westerners by events such as getting married, starting a family or buying a house, or from major events such as severe illness, war, famine, etc. Such ego-crisis result in a reassessment of the individual's perspective on life. The individual’s ego is forced to undergo increasing levels of internalisation, differentiation, individuation and integration. The ego begins to re-evaluate ‘reality’ in increasingly resilient and durable forms – that is, it matures, as seen in rites of passage. An ongoing dialectical tension between separation from reality and reunion provides the driving force for ego maturity\(^\text{136}\). Conscious emotional effort is required by the individual to overcome fears of annihilation and usually involves a degree of psychic pain. Getting control of the ego leads to far more effective social behaviour, although there is no guarantee of maintaining control indefinitely and is usually seen as a life-long process of ego-tension\(^\text{137}\). In westerners, those unable to overcome the crisis are usually locked into ‘ego-stagnation.’ Such people are usually reluctant to change because of overwhelming annihilation anxieties and declare that they can’t change because ‘that’s how they are’\(^\text{138}\). They normally exhibit defensive strategies of over-idealised values, neediness, obsessions, compulsions, persecution complexes and self-destructive tendencies.

Ego development is also intimately connected with social identity (interconsciousness). A social collective (Jung’s ‘collective unconscious’) appears to influence individual ego functioning through sharing of these instincts (fighting against a common enemy), needs (gathering food) and desires (social networks and hierarchy). Contiguous with collective needs is the use of social imagery (e.g. social vision of overcoming an enemy through strategic use of individual skills). Individuals with greater imagery (stronger ego imagination) appear to be more manipulative of social order and have greater leadership tendencies\(^\text{139}\). As we mature from childhood, we begin to segregate those parts of our ego which we feel as vulnerable. If, during the course of childhood, we have learned that vulnerability is something bad, the stronger aspect of our ego assume control. When we meet someone who is more identified with vulnerability, our ego tends to judge or react negatively to that person although at the same time we might feel a strong attraction to the person. This basic rule of the psyche can be expressed as follows:

"The people in the world whom we hate, judge, or have strong negative reactions toward are direct representations of our disowned selves. Conversely, the people in the world whom we overvalue emotionally are also direct representations of our disowned selves\(^\text{140}\)."

From this, we could say that those people who invoke the strongest emotions within us, whether it be intense hate or love, are the most important catalysts for our emotional growth. Overcoming intense love is as important as relinquishing blind hatred. Neither are conducive to healthy psychological development. We need to develop a state of seeing the world that embraces what is being experienced without undue criticism or judgement as these tend to strengthen our egoism. The more we cling to experiences and judge them as good or bad, the more we identify with and cling to the ego.

There are two elemental types of minds; teflon and velcro

Most crucial in our understanding of the ego is its susceptibility to self-dialogue. Research with self-hypnosis have shown that positive ego states can be attained by the use of ego-strengthening, mental rehearsal, imagery coaching and active-alert trance states\(^\text{141}\). Self-hypnosis is used in a diversity of applications from enhancing sport performance in athletes to trauma recovery in sexual/physical abuse. Various techniques are used which aim to restore healthy ego-dialogue. Hypnosis, self-hypnosis, meditation, mantras, etc, have also been shown to reduced acute stress and post-traumatic symptoms that occur after physical or psychological trauma\(^\text{142}\).
The primary malaise of the ego is depletion, where its boundaries are brittle, fragmented or dissolved. As depletion advances, clinical symptoms appear such as anxiety, restlessness, undisciplined behaviour, aggressiveness and laziness. In advanced cases depletion leads to dystonia, where there is major aberrations in cognitive ability, motivation, self-regulation and will-power. Other symptoms also occur, such as depression, aberrant social behaviour, lack of self-assessment and in extreme cases, catharsis. A common German expression for ‘crazy’ means literally ‘not sealed.’ In severe psychoses (where people are usually said to have gone mad), the ego boundaries are non-existent; reality and illusion are one. The imagined world of our fears become so real that we are like the Titanic surrounded by an ocean of icebergs.

Eastern traditions (Hindu/Buddhist) understood the importance of the ego long before it was defined by psychoanalysts. The main objective of eastern traditions has been toward transcendence of the ego. The ego is seen as the cause of all emotional suffering and is meditatively destroyed through relationships of the meditator with animate and inanimate objects. Like the Vulcan ‘mind meld’ in Star Trek, the mind dissolves into everything and reaches a state of ‘emptiness’ or nothingness. Westerners see this condition of ‘emptiness’ as having negative connotations for the ego. Instead, modern psychoanalysis has reinvented the psychoanalytical wheel by constructing a ‘meeting of the minds’ approach. This approach aims at fusing the individual’s ego body with other ego(s); essentially mirroring the approach of eastern philosophies.

Traditionally, westerners characterise the ego by its strength, and seek to develop superiority of mind to body - ‘fullness.’ Christian thinking is such that one lives by aligning oneself (ego) towards God, whereas Eastern philosophies have more circular reasoning (Nietzsche’s ‘eternal repeat of the sameness’) where the individual egos is assimilated into one collective sea of egos. The prime objective of ego sublimation by Eastern traditions is the same as for western philosophies; ego sublimation and rapture with a universal mandala (the numinous father-figure, God, higher self, etc). This has the result of liberating us from all emotional dissatisfaction. This emotional quiescence (‘nirvana’, rapture, etc) results in the abolition of the fear of death (annihilation anxiety). Annihilation contentment (acceptance of death) rather than pushing the ego to suicide has the opposite effect, namely a heightened appreciation of the sanctity of one’s and other’s life. Implied by this is that the ego’s self-survival mechanisms can actually function like a governor on consciousness, imposing limitations to a ‘full’ and carefree life.

According to Jung, the ego, full of distortions and projections, needs to be dissolved before the Self can emerge. The Self, however, which is the totality of the psyche, includes the ego. In the process of individuation one does not destroy the ego, rather one places it in subordinate relation to the Self. The ego is no longer the centre of the personality; the Self, which unites all opposites, is its centre. What is dissolved is the inflated, concrete ego, pursuing its exclusive selfish purposes, just following its own impulses.

‘Man has to cope with the problem of suffering. The Oriental wants to get rid of suffering by casting it off. Western man tries to suppress suffering with drugs. But suffering has to be overcome, and the only way to overcome it is to endure it. We learn that only from him (the crucified Christ).’

But the path leading via the underworld to illumination, to the Self, is by no means an easy one. It requires the sacrifice of our most cherished possession, our ego, so that the Self can emerge. Similarly, Buddhists say the root of all suffering is attachment to ego, and they urge us to relinquish it, so that our true nature can be revealed.

Just as money is not evil but the love of it is, so is ego not evil but our attachment to it

However, Jung repeatedly warns against releasing unconscious content within the psyche without proper safeguards, as it may overwhelm consciousness, resulting in serious psychosis. He compares the potential explosive power of the archetypes latent within the unconscious to that of the released atom, and say:
"The archetypes have this peculiarity in common with the atomic world, which is that the more deeply the investigator penetrates into the universe of microphysics the more devastating are the explosive forces he finds enchained there."146

It can be concluded then, that we should not attempt to commit suicide of the ego, rather that it is important to learn to let go of attachment to mental concepts, ideas and ideals that may only cause us problems in the future. We need our egos, as they are important to keep us functioning as a person. Perhaps the most important facet of understanding the anatomy of the ego is that intellectual performance has been shown to be dependant on a healthily functioning ego. When depleted by unresolved emotional issues, the intellect performs poorly at logic and reasoning, cognitive extrapolation (deduction) and reading comprehension, though not on general knowledge, memorisation or recall147. This is critical to understand not only when it comes to maximising intellectual performance by students but for clinicians under emotional stress associated with work.

The alchemical metaphor

Kathleen Brehony says that ‘we discover the truth of alchemy when we accept it as a metaphor – an intricate allegory – for consciousness and as a clearly defined path for both spiritual and psychological development in which suffering and loss are seen as initiating events’.148 In describing the transformative art that emerges through suffering, it is making the impure into the pure through fire. Jung found the alchemy an exquisite metaphor for individuation or maturation of the ego. Jung believes the inner Self (capital S as opposed to the self, or ego) incorporates the ideal of completion, integration and perfection. Buddhism teaches the importance of knowing anatman – the ‘not self’ – that comprises our true nature, which is separate from what we normally call ‘myself’ which is nothing more than the ego complex. Our Western rational minds often have trouble with these kinds of concepts, ones that dive deeply into numinous waters. The experience of Self is better described in the language of art, poetry, imagination, myth and religion than by logical discourse. It is said that if you have ever felt – however briefly – truly at one with yourself, deeply connected to a larger reality and totally at peace, then you have met your Self. Suffering is metaphorically the fire to individuation and this Self is the gold that alchemists are said to seek.

Twentieth-century psychologists like Jung, Maslow, Carl Rogers, Fritz Perls and Alfred Sadler were not the first to see the process of individuation or self-actualisation. Such an idea has resonated in all cultures throughout history and is found in Western philosophies since the time of Aristotle and discussed by Schopenhauer, Aquinas, Leibniz, Spinoza and Locke, among others. But the common theme is the discovery of one’s true nature, a transformation of one’s view of the world, an enhanced wisdom and an authentic connection to all life. It is the light in matter, the philosopher’s stone, and the gold in lead.

Alchemy is normally described as a three-part transformation. The first stage is the nigredo, or blackening, during which everything is broken down into its essence or elements, similar to a caterpillar entering a chrysalis and dissolving into a prebutterfly ‘stew’. The nigredo is characterised by confusion, frustration and depression; the ‘dark night of the soul’ of St John of the Cross.

The nigredo the ‘fall’ from our sense of normality. Things come apart, the centre cannot hold. Old assumptions no longer ring true; life as we know it is over. It’s the blood on virgin’s sheets, the lipstick on your husband’s collar, the slow-motion as your car crashes into a pole, the late night phone call about your parent’s death, the litigant’s letter, the tax office’s demand, the lump in your breast, the divorce papers, the bankruptcy papers, the school’s report card of a truant son. It’s chaos revealed, a descent into hell, Jonah’s whale and every nightmare you dreaded come true.

The next stage is the albedo, the whitening, which is a result of the fires purging and purifying the elements. Matter becomes transparent (white). Chaos returns to a semblance of order. There are hints of potentiality and a future ‘new’ life. It’s a washing clean, or a baptism. We begin to see ourselves and the world in a new light. Jung explains this stage from a personal experience:

‘Out of much evil, much good has come to me. By keeping quiet, repressing nothing, remaining attentive and by accepting reality – taking things as they are and not as I want them to be – by doing all this, unusual knowledge has come to me and unusual powers as well such as I could never have imagined before. I always thought that when we accepted things they overpower us in some way or other. This turns out not to be true at all, and it is only by accepting them that one can
This stage can only begin when we have mourned long enough to see new possibilities. We are more aware of our neuroses and less likely to project them onto other people, freer from our conditioned responses and habits. Closer to what the Greeks called the true meaning of life. The final stage of psychological renewal through the alchemical metaphor is the rubedo, the reddening. In it we experience the renewal of life’s passions. According to Abraham Maslow in Toward a New Psychology of Being, the individual has achieved self-actualisation. The spirit is renewed. We have undergone a metanoia, a change of heart. The person has overcome the limitations of their neurosis and see reality much more clearly.

In studying thousands of people, Maslow found common properties amongst those who were self-actualised or ‘awakened’ to their inner Self. These include realistic orientation; acceptance of self, others and the natural world; spontaneity; task orientation rather than self-preoccupation; sense of privacy; independence; vivid appreciativeness; spirituality that is not necessarily religious in a formal sense; sense of identity with humankind; feelings of intimacy with loved ones; democratic values; recognition of the difference between means and ends; humour that is philosophical rather than hostile; creativeness; and nonconformism. Jung described the rubedo as a meeting of the conscious and the unconscious. What you might call a ‘defining moment’ or ‘I see things differently now’ or ‘I’ve changed’. The butterfly emerges from its chrysalis. All things are reborn, resurrected, like a phoenix. As the American poet Theodore Roethke once wrote, ‘In the dark time, the eyes begin to see.’ We begin to see a new path and then the journey begins once again. We are no longer sidelined from life; we are able to change our self-image to something more flexible and open. We have overcome our imperfect childhood, our personal history, remarried, remortgaged our home, had another child, levelled the playing field, started a new career and finally get rid of the cliches in our life.

‘The art of letting things happen, action through inaction, letting go of oneself as told by Meister Eckhart, became for me the key that opens the door to the way. We must be able to let things happen in the psyche. For us, this is an art of which most people know nothing. Consciousness is forever interfering, helping, correcting and negating, never leaving the psychic process to grow in peace.

Ultimately, alchemy relates to the creation or purification of ‘the philosopher’s stone’ (lapis). In essence, this stone is the result of transformation of self. Jung believed ‘the lapis is a fabulous entity of cosmic dimensions which surpasses human understanding.’ However to the alchemist Gerhard Dorn, the lapis was not the completion of the art The final process was the integration of the individual with an eternal element; a numinous or mystical event, or in the Oriental traditions, the experiences of Tao, samadhi or satori.

Recent neurological research has revealed how emotions and memories of childhood are processed in nonverbal parts of the brain such as the amygdala and why many adult-life cues can trigger similar emotional responses. We’re hard-wired, it seems, to remember our sufferings. The parts of ourselves that are conscious are the least of our concerns. It is the unconscious depths of ourselves, met at the beach where earth of consciousness meets the murky depths of our inner unknown, that the problems arise. The unconscious operates by deductive logic (if A is true and B is true, then C must also be true), and draws as many false conclusions as correct ones, based on one’s history, experience, belief system or world view. These false views are what distort our reality from the true reality. There is great danger and enormous suffering that comes from allowing ourselves to remain trapped in the familiar, though often painful, role of downtrodden victims. This was summed up nicely by the physician Heinrich Agrippa who wrote that ‘so great a power is there of the soul upon the body that whichever way the soul imagines and dreams, thither doth it lead the body.’ Being unable to respond to chronic suffering is a form of conditioned response, what Seligman refers to as ‘learned helplessness’. George Kelly, an American psychologist describes human personality as being constructed of ‘transparent templates’ which we create and then fit over reality. For example, someone who was an unloved child meets the world with the belief that she is not worthy of good things happening to her. But that doesn’t mean we can’t put the fun into dysfunction. Or that we have to wait for change to happen. The only trap is to assume that suffering equates to major crises in life; the death of a loved one, a divorce, etc. Major crises might come out of the blue, but they aren’t necessarily all the same colour. Big things often hide in little events, like a kingdom lost through a horse’s thrown nail.

The desert of existence
In our culture, most people take it for granted that the ego is an agent that is to be integrated and strengthened in order to direct one’s life. Likewise, the subconscious is commonly regarded as a type of savage ‘alter ego’ that must be mastered by the ego. We believe that the ego is a snare and a delusion, however highly commended by society it may be, because its very essence is to furnish the illusion of enduring self-knowledge of self. Ultimately, understanding the ego is essential if we are to know how to recognise it. Why we need to do this, says Echhart Tolle, is because;

‘As long as the ego is running your life, you cannot be truly at ease; you cannot be at peace or fulfilled except for brief intervals when you obtain what you want, when a craving has just been fulfilled. The ego needs to be identified constantly. The most common ego identifications have to do with possessions, the work you do, social status and recognition, knowledge and education, physical appearance, special abilities, relationships, personal and family history, belief systems and also political, nationalistic, racial, religious and other identifications. None of these is you.

So do we chose to destroy the ego? We think we want something, and we fall into the illusion that we and our ego are one and the same. It really is me that wants, rather than something less visible

When we first begin the journey of self-discovery, we discover that we have been under an illusion, that there appears to be a less visible ‘operator’ pulling our strings and pushing our buttons. We recognise this thing. We give it a name – the ego, the devil, Mephistopheles, Belial, the incubus. Guiltily, we say we are bad, or sinful or that we have done ‘a bad bad thing.’ We then set out in earnest to destroy this demon within. What we are yet to learn is that the ego is itself an illusion. The ego operates at the centre of our conscious mind. It is only the hub of the wheel which, when the wheel is turning, appears to exist. It is the axis or centre around which our mindbody oscillates. It is nothing more than a ‘construct’ or an emergent property of the mindbody continuum, created by a synthesis of our bodily urges, our instinctual drives and interpersonal needs. It is like a bicycle, which only operates by turning the pedals, under the influence of centrifugal forces and momentum. When we stop, it no longer works. A spinning propeller on small aircraft gives an illusion that the propellers are turning slower or moving backwards when they are actually spinning extremely fast. The ego is the backward moving, rapidly blurred image, a widdershins of illusion. What is actually spinning is not the ego, but the mind. It is the altered image or ego which appears to be moving slower, in a forward direction.

The ego can be likened in another way to a mirage of water - an oasis - which we see shimmering in the distance as we walk through a desert. The mirage is a visual phenomenon, and we interpret it as something we want to see – water. We see the oasis in the desert as a reflection of what would be our salvation (a drink of cool water, or to lie under a shady palm tree). The mirage is something which we have longed for during our existence in the desert. It provides the illusion that it is capable of sustaining our journey or even saving us from the constant thirst of our efforts. But as we all know, chasing after mirages, or attempting to destroy them, is pointless. No sooner do we get to them, they disappear, or reappear further away. The ego, and the mirages it throws up before our mind’s eye, are just products of our personal environment. It is the shimmering light of hope reflecting off the heat of our emotions. That doesn't mean it doesn’t exist. Mirages do. But they have no substance, any more than an ‘idea’ has substance. A mirage of salvation was powerful enough for Paul to transform himself on the road to Damascus. In Acts 22, it is said he saw a vision, and heard Jesus, who asked him to stop persecuting the Christians. He had persecuted Christians all of his life and now a vision transformed that journey. Paul’s vision on the road to Damascus was, to him, real. His ears and eyes did not lie. Mirages are also real, yet have no existence beyond our concept of them. It is only in our mind and through our senses (ears, eyes, nose, etc) that anything can exist. Realising the ego as a mirage and nothing else is the only way of successfully negotiating the journey of inner discovery. When there are no mirages, we see ourselves as a traveller on a journey. Which is why, ultimately, we should be like children, seeing everything as new, and seeing it with curious awe and wonderment. It is the elemental part of ourselves, our instincts, imprints, our inner conscience, and emotional states, that define what we are. Seeing through them as mirages allows us to walk the walk; to not be nihilistic in seeing everything as pointless but as being constantly renewed. That here and now is where we are meant to be;
that there is no journeyman, only the journey.

**Knowledge-based practise**

‘Man seeks to form for himself, in whatever manner is suitable for him, a simplified and lucid image of the world, and so to overcome the world of experience.’

*Albert Einstein*

Studying at university is a unique, though arduous experience. I have always found it such a great nuisance that knowledge can only be acquired by hard work. Yet despite the rigour of university, most students find it a halcyon adventure, a period of escaping their parents’ needs and exploring their own. It is a time when we can shrug off the yoke of classroom dictators who parade as teachers and discover the nuances of divergent learning, free thinking and radical opinions. Whether the polemic ideas which university students embrace can be blamed on the ennui of lecture halls, to hormonal changes or to the liberty which the campus eschews, one thing is certain - the mind of students change. Veterinary science as an undergraduate course is arduous enough to occupy much of the teenage needs to expend energy. Rarely do reactionary groups emerge from schools of veterinary science. They would be more socially active if they had the time and energy afforded by a less demanding course, such as the Arts. But that does not negate from the fact that students from every discipline begin to radically question everything they read and hear. Rather than being a detraction, this effluvium of psychic libido in students is what drives them to conquer their course. Redirecting energy that would otherwise be spent on the football field or in steamy Saturday night drive-ins, such students have what older people lack; an evanescence of curiosity intermingled with an appetite to conquer novel worlds. A layman’s dream may be to get laid, but a freshman’s dream is to freshen their understanding of **why**, **how**, **when** and **where**? Which is why any student who isn’t asking these fundamental questions is likely to falter in the Sahara of dry, unrelenting tomes, encyclopedias and textbooks. No matter how interesting textbook writers try to make their case, they must be concise, factual, unemotional and therefore dull. One cannot compare the *Merck Veterinary Manual* to Dostoevsky’s *Crime and Punishment*. In scientific texts, there is no plot, only unending characters. There is no subterfuge, only counterpoising arguments. There is no romance, only anatomy. No dialogue, only diagrams. No teary conclusion, only bibliography. It’s little wonder why so few vets become writers.

The advantage of cut-and-dried study at university is that it prepares us for a clinical life. In 1998, a questionnaire was sent to graduates from all the veterinary schools in Great Britain and Ireland. Graduate students explained that they were generally satisfied with the course, but that there were some subjects they considered important in which the teaching and extramural studies had failed to provide adequate learning opportunities. Two subjects, small animal medicine and anaesthesia, were considered to be ‘very well’ taught, and extramural studies were considered to be ‘very useful’ for three subjects; small animal surgery, cattle medicine and cattle surgery. Graduates are keen to continue learning and specialise after they graduate. They recognise that they have sufficient arsenal at their disposals to attack clinical practise. Though they lack the clinical wisdom that only comes with experience, their primal enthusiasm of finally getting their teeth into the stuff they have long read about propels them into the fields and consult rooms of general practise.

What students should know is that the best arsenal they have is and will be always be knowledge. University teaches us that scientific inquiry comes from first being suspect of something, then knowing it; first by suspicion then revelation. After spending five or so years at university perfecting the art of their science, they have to face what is to them an alien culture - being in business. From the day they graduate, they are employed for their knowledge and clinical skills. This is how they now make their livelihood. There is no impartial government stipend to allow them the luxury of absorbing knowledge *ad lib*. The rigours of practise insist they work for their income. It’s not as bad as it seems, but at some fundamental level, there is a paradigm shift in motivation. Before, knowledge-seeking was motivated by passing exams, or fear of failure or to please family. In practise, this motivation immediately mutates. We no longer get out of bed to study. We throw back the doona because we have a boss, bills to pay, clients to deal with and animals to treat. Though subtle, it is a demanding psychological transformation akin to a rite of passage. We suddenly realise that we are potentially a commodity in a service industry. Growing thorough this false idiom can be difficult. To reach the final realisation that we are more than what we know or can do and that we have value at a personal level is a task which requires considerable work to achieve.
Veterinarians in practice understand that one of the key challenges facing their business is managing knowledge and extending this knowledge to clients\textsuperscript{154}. This problem is no different whether it is a corporate bank or a small suburban veterinary practice. Veterinarians know that what their knowledge-base is why they are in demand. This does not mean that clients are there to use us. Considering the alternative sources of revenue in general veterinary practice, knowledge-based procedures (medicine and surgery) constitutes only 50-80\% of income; the remainder being from marketing, merchandising, sponsorship, etc. From a broad base of learning and experience from university and into general practice, veterinarians have evolved two effective methods of treating their clients:

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<th>The two ways of selling</th>
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Knowledge sharing has the advantage of informing the client of all pertinent information, giving them a sense of participation in the experience. The old-fashioned method of diagnosing a pet’s problem and giving the client medication without explaining what it is used for or why is an opaque method which can only lead to confusion, distrust, lower levels of client compliance and treatment success.

Curiously, the modern shift to knowledge transfer from black-box methods of client dealings has been largely driven by economic forces outside the realm of veterinary science. People are more knowledgable and have a higher expectation of understanding the service they receive and tend to question many things. The advantages of knowledge transfer are obvious; enabling client’s to make better informed decisions regarding their pet’s welfare and enhancing their use of the veterinarian’s services. The main disadvantages of knowledge transfer is that it requires a need for transparency of information and maintaining an up-to-date knowledge-base.

For modern economies, the main consequence of this evolution toward greater knowledge transfer between businesses and their clients is that the distinction between products and services becomes blurred. Commonly, products and services are now thought of as one single entity, ‘client offerings’\textsuperscript{155}. However, it is difficult in this economic environment to make a practise function as a service-only business. Refusing to participate in merchandising, marketing and promotions seems to limit client expectations and satisfaction. However, many successful veterinary enterprises adhere to the maxim that ‘there are riches in the niches,’ and become niche-market practises, such as accredited specialty practises or single-species practises. One of the critical problems with black-box services is that the client sees only the outcome. Thus the service becomes ‘commoditised’ and the client cannot assume that your practise provides this service any differently to another practise. Knowledge-transfer, however, relies as much on the process as the outcome, thus increasing the chances of client satisfaction, medical compliance, treatment success and client loyalty.

Rite of passage; the new graduate experience

*The secret of teaching is respecting the pupil.*

*Ralph Waldo Emerson*

It is often said that when the teacher is ready, the pupil will appear. In today’s veterinary medicine, the breadth of potential clinical skills that a veterinarian may elect to perform is phenomenal - everything from giving an injection into the tail vein of a mouse to performing a fetotomy. Undoubtedly many veterinary schools conduct their own in-house or local practitioner surveys to better define what is a required skill, and likely these lists vary by region, country, and era. Inherent to this question of what is a required skill is the question, Who then decides what is a required skill? Is it the boarded specialist, the academician, the private practitioner, the public, a governing body, or a quorum of the aforementioned parties?

The Ontario Veterinary College documented that graduate competence included the ability to ‘give or obtain appropriate veterinary attention for all species, in any circumstance, whether or not they (the veterinarian) are able to provide the attention themselves\textsuperscript{156}.’ It is important to ensure that students have mastered the preliminary components inherent to a complex skill prior to attempting the complex skills, otherwise we set the student up for a frustrating and unrewarding experience\textsuperscript{157}. Given that we are dealing with a diverse population of students, the outcome of this scenario is varied. For some this experience is an insurmountable roadblock to learning, for others hopefully a lesson in how not to
teach if they should ever find themselves in such a position. When entrance requirements into university do not demand technical expertise and with candidates admitted earlier in their academic careers, we can not expect entering students to have a high degree of veterinary technical experience\textsuperscript{158}. Several veterinary studies, with a focus on small animal surgery, have touched on this issue of teaching the basic components of a complex skill through repeated practice in a non-threatening environment prior to attempting the final complex skill. These studies found that repeated practice of techniques outside the surgical setting (e.g. on artificial subjects, computer simulations, etc), resulted in similar and in some aspects superior performance compared to those simply attempting the procedure itself\textsuperscript{159}. The next leap of learning in clinical skills is doing the procedure oneself with close supervision and strict ‘safety’ guidelines, again with simple to complex skills progressing over time. And the final enormous step in learning is ‘flying solo.’ It has been observed that the percentage of successful ‘solo flights’ when performing certain skills can be increased from 40-50\% to 100\% with this gradual and patient approach to learning clinical skills\textsuperscript{160}. The most ideal and successful teaching structure includes clearly stated objectives, obvious clinical relevance, and appropriate tasks for given levels of skillfulness. Other components essential to motivating students are checklists, procedures, end goals and having adequate learning material. Critical to achieving self-directed learning in teaching programs is making sure the student is fully aware of the benefits of the skills training, negative and positive, tangible and intangible. Also, allowing multiple forms of delivery, offered at all hours, with easy access to students will create situations where students may practice a skill simply because it is in easy reach\textsuperscript{161}.

Major changes in the veterinary professional curriculum have resulted from efforts to assess the effectiveness of the learning environment, assessing teaching and curricular goals, linking assessment of students to course objectives, and the incorporation of increasing amounts of integrated learning opportunities. They have increased significantly the integration of the material taught, providing students the opportunity to incorporate their learning across disciplines. Examples of integrated teaching/learning can be found throughout the 4-year curriculum, exemplified by efforts in the first semester and in the third semester. In addition, faculty have changed their courses to include increased amounts of case-based learning, interactive learning and cooperative learning substituted for the faculty-based lecture setting. Biochemistry, pharmacology, developmental anatomy, neuroanatomy, and medicine are examples of courses that have moved from lecture formats to include case-based material and small group interactive learning.

Education Queensland (in Australia) has defined a number of criteria important for teaching students at primary and secondary levels and these are equally applicable to tertiary level studies. Their Elements of Productive Pedagogies include the following:

- **Higher-order thinking** - Is higher-order thinking occurring during the lesson? That is, is there evidence of conceptual depth, not merely content?
- **Deep knowledge** - Does the lesson cover operational fields in any depth, detail or level of specificity?
- **Deep understanding** - Do the work and response of the students provide evidence of depth of understanding of concepts or ideas?
- **Substantive conversation** - Does classroom talk lead to sustained conversational dialogue between students, and between teachers and students, to create or negotiate understanding of subject matter?
- **Knowledge as problematic** - Are students critiquing and second-guessing texts, ideas and knowledge?
- **Metalanguage** - Are aspects of language, grammar and technical vocabulary being fore-grounded?

Connectedness is an essential component of teaching, with teachers required to ensure that students engage with real, practical or hypothetical problems which connect to the world beyond the classroom, which are not restricted by subject boundaries and which are linked to their prior knowledge. This is especially critical to veterinary students whose theoretical knowledge is punitively tested in the first six to twelve months post-graduation, when ‘real-life’ problems occur in clinical practise.

**A mirror on general practise**

From surveys conducted on new graduates, some common themes emerge. For example, practice type and location seem to be the main influences on graduates looking for their first job. Most graduates usually have their own consultations from the first day. Sometimes during early consultations, senior vets may accompany the new graduate, and most practices provide senior back-up either in person or by telephone. Approximately 75\% of new graduates are on-call within the first week, and 95\% within a
month. Assistance from experienced lay staff appears to vary greatly. About one third of new graduates will leave their first job within two years, citing lack of support, heavy workload, stress or clashes with staff as their primary reason. This high turnover is a problem for employers. Communicating with clients and learning to prioritise jobs is a major obstacle in the first year of practice. Most senior vets view new graduates as coping quite well, although new graduates appear to lack the ability to talk to clients at the appropriate level, wanting to bring all their scientific knowledge to bear on every case, and often failed to consider the obvious or to appreciate clients’ needs. Senior vets also report that greater commitment should be given in the undergraduate curriculum to financial/legal issues and communication skills. Over a third of employers had a pivotal influence on the choice of continuing professional development courses for recent graduates. This emphasises the ‘impressionability’ of new graduates under senior vet supervision. Turnover problems in new graduates can be minimised by practices became more effective in coping with new graduates, especially by supporting their development.

Gender plays a part in career prospects in veterinary science. Trevor Heath from the University of Queensland surveyed veterinary practitioners and found that more than three-quarters (78%) of male but 36% of female private practitioners were partial or sole owners of practices. The median annual income for all male practitioners working more than 40 hours/week was $70,000, but that for females was $43,000. These disparities existed in both city and country practices, and in the case of income it increased with increasing time in the work force. Male practice owners also reported higher incomes than female owners. He concluded that female veterinary practitioners are less likely to own practices, and more likely to earn low incomes than males. These differentials do not appear to be due to location, hours worked or years since graduation or, in the case of income, to whether they are owners or employees. The evidence points to a lower interest by women than men in the business aspects of veterinary practice.

Sixty per cent of veterinarians in general practise work more than 40 hours a week. Veterinarians in general consider themselves reliable, honest, professional, client-minded, and animal-friendly. A general consensus within vets is that the public perceive us as animal-friendly, professional, and reliable. Veterinarians are generally less satisfied in practice than other professional groups such as doctors and dentists, particularly with regard to their income. This position is influenced negatively by the decrease in the number of animals and competition from non-veterinarians and others. The situation could be improved by collaboration and practice fusions, specialisation, and differentiation. More demanding and price-conscious clients and governmental regulations are considered to be important trends. Social, management, and marketing skills, increased knowledge and cooperation, and a vision of future developments are considered essential to be able react to developments on the market. About 60% of the practitioners feel they lack management and marketing skills necessary to react to these developments adequately. Most veterinarians (77%) considered that their training did not provide them with the skills needed for their current position. Entrepreneurship is perceived as poorly developed, in part because this is considered taboo. The importance of skills that are not an integral part of veterinary medicine, such as management, marketing, and communication, is recognised, as is the lack of these skills. Despite this, emphasis is put on continuing professional education, species specialisation, modernisation, accreditation, and expansion of facilities and treatment possibilities as ways to respond to the market situation.

As a new graduate, I had to face the daunting prospect of working in a dairy cattle practice with virtually no experience of cattle work behind me. Were it not for the assistance of an experienced vet to ease me into the new lifestyle, my professional career would have ended abruptly. I don’t think I am alone in saying that the first few years after graduation are fraught with mistakes and steep learning curves, and without the patience of employees and clients, it’s a wonder any new graduate gets through this most fragile time. A particular problem I find as I mature as a veterinarian is trying to encompass new scientific data and new methods of clinical treatments. Having adopted a method which appears to have held me in good stead for many years, it is difficult to undo disciplines that have held well in the past. Being open minded is by far the most important ingredient to remaining mentally flexible. It is said that the mind is like a parachute - i.e it only works when it is open, but one must also remember that you shouldn’t be so open that your brains fall out.

Kierkegaard best sums up ‘learning skills’ when he said:

‘In order to swim, one must take off all one’s clothes. In order to aspire to the truth, one must
undress in a far more inward sense, divesting oneself of all inner clothes, thoughts, conceptions, selfishness, etc, before one is sufficiently naked.

A larger work force naturally lends itself to sharing of ideas, but this should never mean that a veterinary hospital should adopt only one method of treating any one particular problem. Having worked in multi-vet practises, I have found that most vets agree on a method for treating common problems in order to allow each vet to maintain a cohesive method of treatment to a particular case, especially when a number of vets are working on that case.

Vital to any practitioner, continuing education ensures that our theoretical and practical skills are up to date and applicable to emerging new drug therapies and surgical procedures. Not only does continuing education provide educational value, it also helps to rejuvenate practice life and prevent feelings of isolation. These activities can range from problem-oriented chats with colleagues to formal educational programs. The main problems which have been identified as potential barriers for continuing education include timing of events, distance, money, solo practice, stage of career, and family demands. Some of these can be overcome by designing and marketing education courses with specific learning objectives and for specific career stages and using new educational delivery technologies. If continuing education is to improve practice and patient care, it should be integrated into a practice’s strategic planning and considered a legitimate business expense.

How do we know that what we know is all there is to know?

'We should take care not to make the intellect God. It has, of course, powerful muscles, but no personality. It cannot lead, it can only serve.'

Albert Einstein

The western world praises intellect above all things, and pays well for those ‘in the know,’ who have the highest IQ scores, highest grades or most published scientific papers. But knowledge doesn’t strictly equate with competence. In fact, most reports suggest that students with average university grades are more satisfied with their clinical career than high achievers, who traditionally drift from clinically practice into specialty training or academic life to find satisfactory intellectual stimulation.

In a clinical setting, what is the difference between knowledge and wisdom? Or the difference between knowing and knowledge? Does reciting fifteen differential diagnoses for a set of clinical symptoms equate to greater skills than a vet who says ‘I don’t know,’ and proceeds to conduct laboratory tests to determine a diagnosis? There are no hard and fast rules to judging a vet’s clinical competence apart from the obvious ones of their ability to manage a case successfully. Obviously the outcome of treatment is one method of judging clinical competence. An ability to openly share with other clinicians your methodology for diagnosis, treatment and prognosis is another. Modalities of treatment and drug-types change constantly, but one instrument is unchanging – logic. A rational approach, even though it may involve outdated drugs or treatments, can still evoke a cure despite a modern clinician wincing at such ‘barbarism.’ This is not a justification for using leeches on bruises or bleeding horses to optimise their performance. It merely affirms that all knowledge is transitory, whereas the intellect which uses it is the same regardless of a person’s age. It is the disposition to apply logic that sustains good practise, whereas repetitive or obsessive adhering to outdated regimens that describes incompetent practise.

The one good fortune of clinical practise (if it can be called that) is the slow emergence of ‘new’ diseases. In twenty years of clinical practise, I have seen perhaps a dozen new diseases emerge in small animal practise that were not known at the time of my graduation. Many of these are viral diseases and patient reactions to new drugs, but some are previously uncharacterised syndromes. It is not an inordinate load to bear, knowing that we can keep up with these emergent diseases with only a relatively small amount of study. Thus, the main focus for clinicians has been not in the study of new diseases but in the invention of better ways to treating old ones. This is by far the largest clinical challenge faced by most veterinarians and justifies the heavy financial and temporal investments we make to attend clinical symposiums and conferences.

Diagnosis vs. treatment

‘There is no such thing as a stupid question, only a stupid answer.’

Japanese proverb
Most of us would agree that if we could only have one of two possible choices when it came to clinical skills (i.e. we could only diagnose or treat), then diagnosis would be considered far more important clinical skill than treatment. Diagnosing a disease has transformative powers on clinical recovery even without treatment in some human conditions, especially when emotions are a component of clinical symptoms. That is not to belittle the enormous benefits of therapeutic modalities and surgery on alleviating suffering in animals, but merely to apportion the skills which veterinarians use to eliminate animal diseases. We value those whose diagnostic skills are excellent, and seek to improve on increasing our repertoire of clinical, radiological and laboratory techniques.

What we know upon graduation is rapidly transformed by clinical demands. Veterinarians in their first year after graduation use a wide range of complex diagnostic and therapeutic skills. Although many of these skills are acquired during the undergraduate training, a significant contribution is made by extramural practical work undertaken during the clinical years of the undergraduate course and in the first year following graduation. Our knowledge acquired through textbooks is integrated through clinical experience and conceptually ‘shrinks’ due to a process of psychological redundancy. ‘This is important,’ we think to ourselves after successfully treating a new clinical disease, ‘whereas that is not so important.’ Such a ideological shift is important for maturation of clinical skills. Upon re-examining the textbooks after seeing it for ourselves, we slowly recognise what is now important for us. Though personal experiences may sometimes conflict with textbook knowledge, they do not normally change it. In reality the facts haven’t changed, only our perception of them. Our new priorities for diagnosing and treating a disease now alters the intellectual ‘space’ once occupied in our mind. This paradigmatic shift in ‘knowledge’ is the beginning of wisdom, when we begin to differentiate between knowledge and knowing; one a comprehensive intellectual treatise, the other a practical tool for problem solving. One follows the other, and each is essential for the getting of wisdom. However, getting to this point is usually a haphazard process of trial and error and error over years, not weeks or months.

Ultimately, the art of scientific knowledge involves perceiving a ‘sense of beauty’ in that knowledge. Seeing the beauty in a disease’s presentation gives us an intellectual appreciation for the complexity underlying the disease. Appreciating the subtle complexity of processes involved from aetiology to symptoms invariably gives us a respect for the disease and the patient and fosters our continued interest in clinical endeavours. It also gives us a sense of ‘meaning’ to our professional life – that we aren’t just a cog in the wheel of industry – that we are important contributors to animal welfare and social betterment, regardless of how sublime our contributions may feel at times.

Natural vs. artificial intelligence

It is becoming increasingly clear that the problems encountered in discussing the behaviour of artificial intelligence are analogous to those involved in the debate of what constitutes sentience and/or life. If sentience is defined as having self-awareness, self-preservation and an ability to learn, it is not inconceivable that certain types of machines will eventually be eligible for such classification. As absurd as this may sound, it has been undertaken as a serious argument by scientists, philosophers and lawyers. Before the development of more sophisticated reckoners of sentience, scientists used language as the best indicator of sentience. From this yardstick, the use of language implied that humans have a distinguished moral right over all other animals, because the level of language sophistication appears to be more crude in other species. We conclude from this that the greater the language complexity, the greater the sentience. Or vice versa, that which cannot speak is dumb. In light of our knowledge of animal communication, such logic was shown to be tragically flawed.

Marvin Minsky, Professor of Electrical Engineering at MIT defines artificial intelligence (AI) as ‘the science of making machines do things that would require intelligence if done by men.’ These modern machines (especially computers) are modelled on human cognitive and psychological skills, albeit through software programmes rather than through neurones and social learning. The contentious issue is whether AI will ever be sentient, or merely have the appearance of it. If, for example, a computer was taught to ‘yell out in pain’ when it is struck by a violent electrical shock, does this mean that it is in pain? Is physical, emotional or mental distress directly comparable in synthetic systems? Does avoidance of pain quantify as a confirmation of pain, especially when an AI system it is pre-programmed to do so? Although it is difficult to answer these questions, what we can say is that the criteria which we use to determine sentience in animals can prove that certain forms of AI as truly
sentient, although not necessarily sentient life.

To be self-aware, an artificial intelligence must possess self-awareness defined as perception, especially sensory perceptions. This can be interpreted as a capacity for physical transduction (sensory ability; chemical, electrical, etc), analysis and pattern recognition and differentiation of complex sensory information, as well as the interpretation, and control of cognitive attention (i.e. concentration). This is a huge area of specialty in AI development. Specialised sub-fields have developed according to the sensory modality, the kinds of things being perceived, the forms of representations used, whether perception is purely data-driven or includes top-down processes, the mechanisms used (e.g. neural or symbolic). Self-awareness also requires some sort of language or communication skills, including production and interpretation of this language through whatever means.

To learn, an AI system must be capable of using structured symbols (e.g. sentences or states of a network, like temperature or concentration of blood sugar) in a variety of roles. These include the representation of facts (beliefs), instructions (motives, desires, intentions, goals), plans, strategies, selection principles, etc. They as well as being capable of ‘laziness’ (i.e. able to use the information expressed in the symbols in order to achieve goals with minimal effort). There are many more criteria including symbolic learning processes (e.g. rule induction), the use of neural nets (sometimes described as sub-symbolic), the use of evolutionary algorithms, self-correction (self-debugging) systems, self-organisation, problem solving, automatic design, analogical reasoning, defeasible inferences, logical and mathematical reasoning, study of ontologies, memory mechanisms, and multi-linguistic and non-linguistic communication.

An alternative conceptual framework is to give priority to social relationships as an essential component and constructor of intelligent behaviour. This is based on the knowledge that intelligence manifests itself relative to specific social and cultural contexts, rather than an abstract capability for rational thought. AI in this milieu involves the appropriation or ‘taking up’ of positions within the conversations and narratives in which it participates. This approach ascribes meaning to experience in the social matrix, and by practices of self and of relationship into which intelligent life is recruited. This has implications for the technology of the future, as, for example, classic artificial intelligence models such as goal-directed social problem solving.

The reason AI is discussed in this book is the question of right to life. If an AI system has an inbuilt functions of self-preservation, self-awareness and learning does it have a ‘right to life’ accorded by other animals including humans. If so, under what kingdom (animal, vegetable or mineral, or a third ‘artificial’?) is it legally bound? Artificial intelligences already operate in the veterinary domain, including interpretation of medical images, diagnosis, expert systems to aid vets in the monitoring and control of intensive care units, design of drugs, intelligent tutoring systems for various aspects of teaching. Having said this, there is a huge difference to the already existent AI systems which presently assist our work to those in the future which may be inherently self-existing, self-aware and able to learn. It seems likely that an artificial entity with a consciousness and self-awareness and ability to preserve itself equal to our own is unlikely to be given human status. Thus, it would fall into the dominion of the veterinary sphere of animal rights and ethics. In the future, we may well have not only cattle vets or greyhound vets but also AI (artificial) vets.

Atheists might say of AI life ‘who cares anyway?’, whereas Christians would maintain that ‘only man has a soul; not animals or machines,’ whereas existentialists might reason ‘let’s just enjoy their presence.’ Thus, the possibility of ‘emergent’ sentience through AI systems would make a conundrum.
of the already complicated issue of animal rights.

**Nonhuman cognition - Cognitive Ethology**

Cognitive ethology, broadly defined as the evolutionary and comparative study of nonhuman animal (hereafter animal) thought processes, consciousness, beliefs, or rationality, is a rapidly growing field that is attracting the attention of researchers in numerous and diverse disciplines. Many different types of research fall under the term cognitive ethology and it currently is pointless to try to delimit the boundaries of cognitive ethology. Although cognitive ethology can trace its beginnings to the writings of Charles Darwin and some of his contemporaries and disciples, the modern era of cognitive ethology is usually thought to have begun with the appearance of Donald R. Griffin’s book *The question of animal awareness: Evolutionary continuity of mental experience*. Because cognitive ethology deals with animal minds and mental states, there is also some debate about whether or not a science of cognitive ethology is even possible. Proponents for the dismantling of cognitive ethology put forth their arguments thus;

- Mental events are private phenomena.
- Private phenomena cannot be studied biologically.
- Therefore, mental events cannot be studied biologically.

Griffin, a proponent of cognitive ethology remarks in his book *Animal Minds* that;

‘Contrary to the widespread pessimistic opinion that the content of animal thinking is hopelessly inaccessible to scientific inquiry, the communicative signals used by many animals provide empirical data on the basis of which much can reasonably be inferred about their subjective experiences.’

Animal welfare issues are tightly connected to views on the cognitive abilities of nonhumans. There are a plethora of areas of research (e.g. play intention, anti-predatory vigilance, food caching, individual recognition and discrimination, assessments of dominance, habitat selection, mate choice, teaching, imitation, communication, tool-use, injury-feigning, observational learning) in which cognitive ethological approaches have been, or could be useful, in gaining an understanding of the behaviour of nonhumans and asserting their moral rights.

Many models in ethology and behavioural ecology presuppose cognition. It may be more economical or parsimonious to assume that not everything that an individual needs to be able to do in all situations in which he finds himself is pre-programmed. While general rules of thumb may be laid down genetically during evolution, specific rules of conduct that account for all possible contingencies are too numerous to be hard-wired. Behaviouristic learning schemes can account for some flexibility in organisms, but learning at high degrees of abstraction from sensory stimulation seems less amenable to behaviouristic analysis. Cognitive models of learning provide explanatory schemes for such cases.

**Summary**

It is the way we look at problems, rather than what we know, that is a predictor of clinical success. Our knowledge drive, not our knowledge base, propels us to solve common clinical problems in more efficient and palliative ways. This is the art in science operating at its best. What drives us intellectually is dependant upon our aspirations, being firm in our convictions, being ever mindful of this striving, to develop keen concentration and wisdom. These simple steps can ensure we achieve our goal of being the best at what we want to be, whether it be a veterinarian, a café owner or a real estate agent. Without concentration, our mind has no freedom, and is forced to go wherever our emotions lead us. Concentration gives us control over our mind, over the constant intellectual chatter that arises from moment to moment.

The beauty of the journey is that it doesn’t matter where we’ve come from to get here, only that we continue the pursuit. Every night before a concert, John Lennon would intone a mantra to his fellow ‘Beatles’, asking them ‘Where are we going boys?’, to which they would recite the oft-known reply ‘To the top of the top.’ It was a constant reminder for them to focus on the goal rather than the present moment’s difficulties. We don’t need the fame of the Beatles to be our goal, but it is a self-evident truth that aspiring to something invariably leads to its attainment. A leading American physician describes how attaining scientific excellence can be got through appreciating the ‘beauty’ of the
endeavour.

‘Beauty is a concept(s) believed to possess qualities of formal perfection, which reconciles the polarisation of self and world; the love of beauty is an indication of the importance of idealisation during development. Beauty provides us with an occasion for transcendence and self-renewal. The sense of beauty can also reconcile and integrate self-states of fragmentation and depletion and as protection against self-crisis. The sense of beauty can alleviate anxiety regarding death and feelings of vulnerability. The love of beauty is a defining trait of civilisation. For a people not to value beauty would mean that they cannot hope and cannot assert life over the inevitable and ubiquitous forces of entropy and death’.\textsuperscript{172}
Clarity of Vision

Ability to see clearly through the ‘smoke’ of emotions in a professional setting
Ability to see emotions as an important facet of human expression

‘The only real voyage of discovery consists not in seeking new landscapes but in having new eyes.’
Marcel Proust

Definitions:

*Emotion:* any strong feeling, as of sorrow, fear or joy

*Conflict:* an emotion resulting from two incompatible needs or wishes

*Neurosis:* an unresolved emotion arisen from conflict

*Renunciation:* to voluntarily resolve an emotional conflict.

Life could be pessimistically defined as a sexually transmitted disease with a grave prognosis. Realising the ephemeral nature of life, that all things must pass makes many people pessimistic and obsessed with clinging to their youth. Though I do not prescribe to shortening life (in fact, quite the opposite), it is our fear-based obsession with retaining what we imagine as important (youth, vigour, wealth, fame) that is the neurosis behind ‘disgraceful ageing.’ Though we may laugh at the antics of Hollywood celebrities and the fears and foibles they display so unashamedly, their psychological dilemmas are not unique to Rodeo Drive, but merely magnified there. What we see under the microscope of tabloid reporters is but a microcosm of typical western emotional neurosis at its finest.

As we shall discuss later, there are a number of essential truths about emotions:

- All emotions arise from conflict
- All emotions originate neurologically and are expressed biologically
- All emotions have attractive, repulsive or neutral qualities
- All emotions are retained permanently until resolved

Developing emotionally clarity helps us to deal with emotionally-charged clinical cases that question who we are, where we are going and who is with us. It is about trying to see through the ‘smoke’ of emotions, not letting our own emotional smoke colour our thoughts, words or actions or being affected by a particular client or patient’s emotional smoke. It is also about attempting to see where it is they are coming from intellectually, culturally or financially. But, to clarify preconceived or strongly held beliefs is not a simple process. Such beliefs and precepts begin in childhood and are an invaluable part of a person’s life experience. Changing our mind about them is often fraught with insecurities, since most of us hold our beliefs as valid and factual assumptions drawn from years of experience.

So why should we want to change our opinions about anything? Indeed, do we even have to? Fortunately, most of our opinions are based on sound ethical and moral perspectives. The only ones we need to change are those, if any, which cause inner conflict. If, for example we are dealing with a particular species or breed of animal and find we are getting annoyed and frustrated during the consultation, we usually keep such untoward emotions to ourselves. Often it is only when we say ‘I can no longer deal with Rottweilers’ or ‘I hate dealing with people who always ask for a discount’ that it has the potential to cause us inner conflict. We may now hate Rottweilers, but that doesn’t stop clients bringing Rottweilers to us to treat. Unless we are able to defer the work to colleagues or work in a non-Rottweiler practise, what do we do? Of course this is a trivial example, but many veterinarians have left clinical practise for such trivial reasons that could have been resolved with adequate understanding and peer support.

Having to deal with numerous emotionally-charged issues on a daily basis can generate
incredible resentment and anxiety in practitioners. Left unresolved, these issues eventually manifests as physical (disease) or psychological (anxiety, depression, etc) problems. Most vets accept that there are unsavoury aspects to our occupation and learn to accept them, or avoid such situations in the future or bottle them inside and vent them only when it is safe to do so. Such fail-safe mechanisms of coping are fine provided they do not interfere with our sanity or someone else’s.

Importantly, raw intelligence is not able to clarify our emotional dilemmas by itself. Cognitive logic fails in this regard because of its inability to ‘sort’ emotions in meaningful ways. Because emotions are nonlinear (e.g. ‘I feel you betrayed me, and because of this I have betrayed myself’) intellect struggles to make meaning out of illogical thought processes. We reflect on the fact that all the great accomplishments in science, architecture and physics are the result of great intellects, yet dismiss the fact that many famous dictators, schizophrenics and psychopaths also had inordinately high IQs. Intellect is not the prime motivator of life. It is a tool used by the emotions. This is a common misconception which abounds in western ideology. Our intellect see things not as they are, but as we are. How then do we clarify the emotions which are a normal part of human life, if our intellect can’t resolve them? How do we develop a clearer vision of what lies before us?

In this chapter, we will show how it is not the intellect but our emotions that is the prime motivator in life, and once clarified, is the most powerful and creative drive in all human endeavours. Although intelligence is important in recognising conflicting emotions, it is an inherent ability of people to consciousness evoke positive emotions that is important not only for overcoming negative emotions but creating a happier life that resonates with meaning.

Many successful veterinarians have a capacity to be cognisant of what emotions are being conveyed by a client (e.g. grief associated with a dying pet) while at the same time facilitating its resolution (e.g. offering a tissue, or assisting with burial - being a ‘silent’ witness). This emotional resonance appears simple, but can take practise to master and is discussed in this and later chapters. But before we can understanding how practitioners practise this art of emotional resonance, we first need to understand what emotions are, where they come from, and how to deal with them.

**The anatomy of emotion**

‘Success is getting what you want. Happiness is wanting what you get.’

Dale Carnegie

Emotion literally means ‘disturbance.’ The word comes from the Latin *emovere*, meaning ‘to disturb.’ Another way to think of it is e-motion (energy in motion). Such disturbances include feelings of joy, sorrow, disgust, hatred, jealousy or fear. As to where emotions come from, neurophysiologists will tell us that they arise via the limbic system. The limbic system commands certain behaviours that are necessary for the survival of all mammals. It gives rise and modulates specific functions that allow the animal to distinguish between the agreeable and the disagreeable. Here specific affective functions are developed, such as the one that induces the females to nurse and protect their offspring, or ones which induce animals to develop ludic behaviours (playful moods).

Emotions are best envisioned as emergent properties of the neural processes in our brain. Sugar, for example, is neither inherently sweet nor satisfying. Rather, we believe it so because over evolutionary time those most drawn to the energy in sugar were the ones most likely to survive and successfully reproduce. Human emotions are likely to have emerged out of this evolutionary process by which neural networks deal with rapidly changing environments. For example, a conflict with a potential mate (argument) causes an emotional response (anger) and a behavioural change (decide to be more tactful next time) which may confer advantages for fitness and survival.

Emotions like wrath, fright, passion, love, hate, joy and sadness, are responsible in mammals for personal identity (ego, or Self) and for important heuristic functions related to memory. The limbic structures in the brain that govern emotion integrate with neocortical structures, particularly the prefrontal areas, in producing the instinctual emotional responses that have been essential for our
survival throughout human evolution. These prefrontal limbic structures appear to be the underlying circuits for the bulk of emotional control by humans, and the region most malleable to positive reinforcements\textsuperscript{174}. Emotions arise from the interconnections between the limbic and cerebral neocortex regions of the brain. High levels of neurone activity in the left prefrontal area evokes positive emotions of happiness, enthusiasm, joy, high energy and alertness. Until the mid 1980s, the dogma of neuroanatomy was that the brain contained all of its neurones at birth and was unchanged by life experiences, apart from minor alterations in synaptic interconnections and neurone death. However, recent evidence confirms ‘plasticity’ in brain connections which continually change with experiences, and what is most fascinating, there are new neurones which develop throughout life from neurone stem cells\textsuperscript{175,176}. The dictum that the brain cannot renew itself was finally challenged by Fernando Nottebohm, a zoologist at Rockefeller University in New York. He first observed that some songbirds change their songs with each season. He speculated that neurones carrying old patterns were being exchanged for new ones. After bearing much ridicule from the scientific community, he showed that old birds as well as young ones were indeed producing thousands of new neurones each day. It is now generally accepted that new neurones are generated continuously in some parts of the human brain. And there is strong evidence that primitive neural stem cells continue to divide in the human brain even in old age. This helps explain why, under certain circumstance, the brain repairs its own damaged tissue\textsuperscript{177,178}. The traditional theory of split-brain function, which emerged in the 1970s, said that the right and left brain correspond to different cognitive functions; for example that left brain was responsible for analytic functions and right brain for artistic, musical, intuitive, feeling responses. But such a simple model, though partially true in amateur architects or musicians, falls down as a model under serious investigation. In all mammals, any kind of complex cognitive behaviour is not based in a single area of the brain. Emotion, especially, results as a concert of areas working together.

The frontal lobes (important for executive functions) plays a role in not only cognitive intelligence but also emotional intelligence. This part of the brain is therefore crucial for regulating emotions. The ventromedial cortex is also essential for regulating emotion. People who have damage to the ventromedial cortex show unregulated, disrupted angry behaviour such as violent outbursts of aggression. The amygdala activates all kinds of negative emotions, especially fear, and is responsible for propagating delusional states such as phobias. Damage to this part of the brain causes loss of fear to discrete, threatening objects and notions of fear of death. People with an history of severe aggression (anger) show shrinking or atrophy of the amygdala. The hippocampus is another CNS organ important for emotional memory, specifically for evaluating the context of the emotion and regulating. In both depression and post-traumatic stress, the hippocampus actually shrinks. Antidepressant medication has been shown to reduce shrinkage of the hippocampus when treated early in the disease\textsuperscript{179}. The important fact about these three regions of brain, which are responsible for emotional integrity, is that their plasticity has been traced down to the level of gene expression. For example, if a person is raised in a nurturing environment, these changes are demonstrable at the genetic level\textsuperscript{180}. A final point to mention is that the frontal lobes, amygdala and hippocampus are all extensively connected with the immune system, the endocrine system and the autonomic nervous system (heart rate, blood pressure, etc). This gives us an idea of the impact emotions have on mental and physical health.

The brain areas that initiate emotion and those that regulate them are all activated simultaneously. If people recover quickly from a negative emotional event, they are more likely to have reduced responses to threatening situations. This is a conditioned response. The up-side of this heuristic response is a reduced state of mental and physical stress with reduced levels of cortisone, adrenaline, immune suppression, etc. When cortisone is present in high levels over long periods it has been shown to kill cells in the hippocampus, making individuals prone to chronic depression and post-traumatic stress.

**Addiction**

Addiction, one of the most powerful of all emotions, activates numerous parts of the brain, but the nucleus accumbens is particularly highlighted in MRI studies. This is an area of the brain rich in dopamine and is a drug which appears to be involved in all forms of strong craving, desires and addictions\textsuperscript{181}. In pathological gambling, there is a relative decrease in activity of frontal and orbitofrontal cortex, caudate/basal ganglia, and thalamus, regions responsible for emotional
regulation\textsuperscript{182}. The most provocative stimuli for addiction stimulate localised activity in the ventral anterior cingulate. These changes are often temporary, and last only for the duration of addictive stimulation, but residual hypersensitivity (susceptibility to recurrence) occur. These changes to frontal, paralimbic, and limbic brain structures occur concurrently with deregulation or reduced activity in other brain regions where impulse regulation is mediated.

Within society, workaholism is an unseen addiction. It is also proposed by some researchers that we all participate addictively at some level by working and consuming beyond necessity. Indeed, our western social structure, born in lean and hungry post-war years, sponsored a work-ethic that itself is possibly an addictive system which mirrors an individual addict in the way it functions and the processes it sets up. The problem with addiction is not that there are people running around with addictive personalities; but that there may exist an addictive social process influencing all of us\textsuperscript{183}. Thus, logic dictates that perhaps all things are inherently addictive but that individual choice is the only moderator.

The psychology of emotion

'Nature is not cruel, only pitilessly indifferent.'

Richard Dawkins

Essentially, only two emotions exist; fear and love. As is shown in the figure below, it is from these two basic emotions that all other emotions arise. The ultimate fear of any animal is the fear of death (annihilation anxiety). Mystics describe how meditation on death and dying is the ultimate liberation from all fears. Conversely to fear, the ultimate love is union, whether that be physical or psychological. All physical forces in the universe, whether acting on molecules, mammals or the milky way, have only one of three possible charges; positive (attraction), negative (repulsion) or neutrality. (What we must also remember that a neutral charge is not zero. Neutral molecules, such as hormones for example, still throw their weight around, pharmacologically speaking.) Emotions, in this respect, are no different. Thus, the two emotions of fear and love give rise to six emotional states of varying degrees, extremes and counterpoises, as defined by these three states of attraction, repulsion or neutrality. From these six states, many hundreds of other emotions have been described. However, it has been shown that just getting ‘a handle’ on these six emotions has a significant effect on psychological health and well being\textsuperscript{184}.

From a psychological viewpoint, the essential origin of emotions is conflict – emotions arise as a result of conflicting physical, psychological or temporal (perceiving something will happen or has already happened) urges. Conflicts can be from either external sources or internal ones (as experiments in dreams, sensory deprivation, and hallucinations have shown)\textsuperscript{185,186}. Conflicting urges produces either a positive (attractive), negative (repulsive), or neutral (unsure) response. All emotional conflicts, even neutral ones, are maintained indefinitely in limbic memory until the emotion is reinforced or ‘renounced’ (resolved or assimilated). This memory may be consciously recalled or not.

\textit{Figure 3. The origins of emotions}

<table>
<thead>
<tr>
<th>Force</th>
<th>Fear</th>
<th>Love</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repulsion</td>
<td>ANGER</td>
<td>CONTENTMENT</td>
</tr>
<tr>
<td>Attraction</td>
<td>DESIRE</td>
<td>CURIOSITY</td>
</tr>
<tr>
<td>Neutrality</td>
<td>DELUSION</td>
<td>JOY</td>
</tr>
</tbody>
</table>

Emotional conflicts that are not assimilated or even available to consciousness at the time remain buried in the unconscious. Emotional pain deprived of meaning is buried as a complex (neurosis)\textsuperscript{187}. Intolerable conflicts require verbalisation such as are found in the context of psychoanalysis or may give way only slowly and irregularly over long stretches of time, when subjected to new life experiences. Studies on homicides have shown that submerged neurosis can recrudesce at times of emotional conflict to wreak havoc on the individual. Contemplating murder may seem alien and unreal to most sane people, but to some their ego becomes fixed on the act, accompanied by mounting inner pressure to act upon it with a desperate hope that it will resolve the inner conflict. The offender comes to
believe that he can resolve his inner turmoil by committing an act of extreme violence against a person(s) he feels emotionally bonded.

For an emotion to be reinforced depends on its relation to a previous conflict trigger (regardless of whether it was consciously remembered or not), whose ability to reinforce this emotion is dependant upon a prior conflict trigger and so on, back to a point where the first conflict trigger emerged – the point of emotional ‘innocence’ (also reached in meditations where triggers are eventually uprooted and renounced). Conflicts may well be the best method for enhancing evolutionary fitness in social animals. Reinforcement of emotions are critical for survival and act as vaccines against unhealthy survival tactics.

However, the perpetuation of some emotions have been shown to be genetically inherited (especially aggression), and though they may produced untoward results for individuals, as a social group these inherited emotions must have had some selective advantage at some point in the past. In chronic depression, which often runs in families and thought to be a result of inhibited aggression, casts suffering on individuals not able to express these aggressive tendencies in healthy ways. Such unwanted emotions are akin to the itch-scratch-itch cycle of self-perpetuating trauma and can be difficult, if not impossible to overcome without medication or aggressive (no pun intended) psychotherapy.

The ethologist Konrad Lorenz, whose studies on animal ethology won him the Nobel prize, proposed a mechanism (violence inhibition) that is activated by non-verbal communications of distress. This mechanism is said to be a prerequisite for the development of three types of morality; the moral emotions (such as sympathy, guilt, remorse and empathy), the inhibition of violent action (suppression, diversion) and the moral/conventional distinction (avoidance of future conflicts). Emotions influence motivation, learning, and decisions and, therefore, influence behaviour and, ultimately, fitness. Subjective feelings offer a window (often distorted) into motivation, but they are not the essence of emotion. Negative conflicts, though useful from an evolutionary perspective, are not necessarily conducive to social harmony, and in fact are often counterproductive if we consider the negative emotions so prevalent in society.

From an evolutionary point of view, positive emotions (joy, interest and contentment) don’t seem to have the same survival value as negative emotions (fear, anger and disgust). The negative emotions elicit specific actions for fight or flight, which must surely have helped our ancestors survive the dangers of their time. But the positive emotions help in survival by allowing the mind to conceptualise laterally in problem solving and to help build resources (intellectual, physical and social) and thus are tremendously important for realising social goals.

Emotional intelligence

It has been said that emotional intelligence is 25 times more powerful than intellectual intelligence. For decades, a lot of emphasis has been put on certain aspects of intelligence such as logical reasoning and math, spatial and verbal skills. Researchers were puzzled by the fact that while IQ could predict to a significant degree the academic performance and to some degree professional and personal success, there was something missing in the equation. Some of those with high IQ scores performed poorly in life in terms of financial, relationship and career achievements; one could say that they were wasting their potential by thinking, behaving and communicating in a way that hindered their chances to succeed.

Since first proposed as a theory in 1990, emotional intelligence (EI) has diverged into several distinctive models based on intellect or personality, performance, social intelligence, personal self-management skills or social skills. The movement in education has been to implement curricula that teach these EI skills using the general term ‘social and emotional learning,’ or SEL. All these EI models share a common core of basic concepts. However, emotional intelligence at the most general level refers to the abilities to recognise and regulate emotions in ourselves and in others. EI-based theory of performance has direct applicability to the domain of work and organisational effectiveness particularly in predicting excellence in jobs of all kinds, from sales to leadership.

Examples of emotional intelligence:
1. Ability to see ‘the bigger picture’ in an emotional situation
2. Ability to distinguish the ‘real’ from the ‘unreal’ emotions
3. Understand emotions as having ‘causes and effects’; e.g.
   - anger is self-perpetuating
   - in relationships, drama ≠ love
   - emotional deferral (control) vs. emotional denial (perpetuation)
Because of their ability to maximise their relationships with other people and to effectively deal with personal issues, people with high emotional intelligence and average IQ are often more successful in relationship stability, career achievement and financial security. Studies have indicated that trauma to the brain’s emotional circuitry and that circuitry’s connections to the prefrontal areas can have significant consequences for the performance of competencies associated with EI, such as empathy or collaboration, yet can leave abilities associated with pure intellect entirely intact.

Emotional intelligence is an important discovery to understand and is discussed later in this chapter. It is an essential social tool for use in our profession where relationships with peers, colleagues, co-workers and the public are so important. EI can be assessed by intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood. EI skills range from simple to complex psychological processes involved in integrating emotion and cognition. The first skill is an ability to perceive, appraise, and express emotions. Abilities here include developing emotional awareness by identifying one’s own and other’s emotions, expressing one’s own emotions and discriminating the expressions of emotion in others. The second skill involve using emotions to facilitate and prioritize thinking, recognising that mood swings can lead to a consideration of alternative viewpoints, and understanding that a shift in emotional state and perspective can encourage different kinds of problem solving. The third skill involves an ability to label and distinguish between emotions (differentiating liking and loving, for instance), understand complex mixtures of feelings (such as love and hate), and formulate rules about feelings: for example, that anger often gives way to shame and that loss is usually accompanied by sadness. The fourth skill is the ability to marshal the emotions in support of some social goal. In this more complex level of emotional intelligence are the skills that allow individuals to selectively engage in or detach from emotions and to monitor and manage emotions in themselves and in others.

Gratification deferral

*If a person had delivered up your body to some passer-by, you would certainly be angry. And do you feel no shame in delivering up your own mind to any reviler, to be disconcerted and confounded?*

*Epictetus*

Gratification, or drive, is defined as the fulfilling of purpose, the sense of one’s life being an unfolding story. Its biological basis is the highly evolved human social intelligence; specifically the ‘theory of mind’ mechanism and the ability to imagine human dispositions, motivation and intentions. Gratification is therefore a matter of participating - intellectually and emotionally - in the unfolding of human character and relations over real time. The lack of such a desire commonly results in boredom, loneliness and anomie.

How then do we distinguish between gratification, which we defer for future savouring, and present happiness? Few of us can clearly distinguish the difference between a cool drink on a hot afternoon or a back rub, on the one hand, and rock climbing or playing bridge on the other. The difference is total absorption, the suspension of consciousness, and entering the flow of the activity. These are the elements which define true gratification. True gratification has the psychological effect of total immersion, i.e. emotions are completely absent. It is the gratification, not the pleasure, which are key to leading a fulfilled life.

The psychology of gratification deferral in the present for greater rewards in the future has been the backbone of twentieth century social progress. As one of the so-called ‘vigorous virtues’, including entrepreneurship, individual initiative and personal responsibility in making appetites conform to resources, together they constitute what is called adulthood.

Though gratification deferral is an excellent motivator for career achievements, it doesn’t necessarily equate with gratification per se, or guarantee that the pleasure received in the future outweighs the pains taken to achieve that goal. Evidence abounds to the contrary. Success is risky and nebulous, future gratification only sometimes negates long-term difficulty and a mind steeped in deferral/denial is difficult to alter (de-programming self) after a certain number of years. Economic
consumption supposedly meets every demand to gratification, but rarely meets this promise at a psychological level\textsuperscript{28}. This quest for long-term gratification requires a process of self-regulation and self-surveillance, enforcing on us a process of continual dissatisfaction with the objects in our present life, subjugated to our inner ‘dream’ goal\textsuperscript{29}. Such continual suppression can be difficult to maintain, especially without it tainting present experiences.

When we consider deferring our gratification (e.g. saving to buy a new house), a number of assumptions are implicit. Firstly that the gratification we will receive in the future is achievable, that the pleasures of future gratification outweigh the present difficulties, and that the ‘Not tonight, Josephine’ mind-set\textsuperscript{30} is able to be switched off once the goal is achieved. However, these assumption come with no guarantee. The prospects for satisfying such gratification looks slim, based on studies of western society’s move toward greater economic efficiency; resulting in mass production, competition, regulation, inequality, squalor, instability, geographical mobility and more loneliness for many people\textsuperscript{31}.

As the economist Christopher Lasch remarks,

‘According to the myth of capitalist enterprise, thrift and industry held the key to material success and spiritual fulfilment. The self-made man, archetypical embodiment of the American dream, owed his advancement to habits of industry, sobriety, moderation, self discipline, and avoidance of debt. He lived for the future, shunning self-indulgence in favour of patient, painstaking accumulation and as long as the collective prospect looked on the whole so bright, he found in the deferral of gratification not only his principal gratification but an abundant source of profits. In an expanding economy, the value of investments could be expected to multiply with time, as the spokesman for self-help, for all their celebration of work as its own reward, seldom neglected to point out\textsuperscript{32}.’

The alternative, of seeking instant gratification and abandoning personal and career goals, is no more advantageous. Advertising has always been one of the most influential forms of creating short and long term goals. We see advertisements of successful professionals living in magnificent houses, driving fast cars and embraced by equally fast and magnificent lovers. We are conditioned into thinking that we want more than we have, that we can look different than we look and go places we’ve never gone, based on creating a need where previously no need existed. Advertising, often performed so extensively as to produce cultural white noise in the background of our conversation (via TV, radio) and work (billboards, workplace advertising, internet, etc). ‘No one ad is so bad,’ says Mary Pipher, a clinical psychologist and author of \textit{The Shelter of Each Other}, a best-seller about family life\textsuperscript{33}. ‘But the combination of 400 ads a day creates in children a combination of narcissism, entitlement, and dissatisfaction.’ This kind of dissatisfaction is destructive rather than productive. It is dissatisfaction based on ownership (or lack of), materialism and aesthetic appeal, rather than a productive way of improving ourselves. ‘In most aspects of life, people do best at tasks with known deadlines, especially those that offer immediate and certain gratification,’ observes Olivia S. Mitchell, executive director of the Pension Research Council and Wharton professor of insurance and risk management. ‘Sadly, saving for retirement doesn’t offer quick and positive reinforcement, and the rewards are far from certain. Indeed, it’s a wonder that some people manage to save at all, given the obstacles.’

In high-powered executive environments, stress is concomitant with the lifestyle, and high stress, though not deleterious to reproduction in the short term, is destructive to longevity. Psychologically, we have evolved to shorten our exposure to stressful environments, thus minimising health losses and maximising financial reward; ’to get what we can, then get out.’ Though this is successful for someone who is in their thirties, by mid-life they find it increasing difficult to remove themselves from this environment because of financial, marital and filial commitments. The motivation thus has been adapted to ‘getting what they’ve got and being happy with it.’

What is most problematic with gratification deferral is the ingrained psychology of ‘suffering in the present for future pleasure.’ Though an admirable trait, it results in a generation of individuals ill-equipped with living in the present moment, always looking to some future goal which may or may not exist. When the time comes to enjoy the fruits of our labour (if we still have the senses capable of enjoying them), our habitual psychology of deferral will instinctively override such pleasure and leave us with feelings of guilt, remorse and unhappiness. This is not an argument for hedonism, since that too is psychologically unsound. It is more important that we endeavour to improve maximising present pleasures that are conducive to self-health (pleasures that are not dependent on external factors) that should be our greatest priority. Such pleasures include meaningful employment, sound relationships
and an integrative belief system that gives meaning to one’s life. These pleasures are far more resistant to stock market variability, interest rate fluctuations, fashion trends and termite attacks, and more conducive to lasting happiness to self and others.

**The paradox of happiness**

*The good ended happily, and the bad unhappily. That is what fiction means.*

_Oscar Wilde._

The Western society seeks happiness is materialism is not new. Capitalism motivates the individual by asking them to place self-interest above ethical considerations. As Todd Gitlin wrote in _Inside Prime Time_ about American television:

‘Prime time television gives us people preoccupied with personal ambition. If not utterly consumed by ambition and the fear of ending up as losers, these characters take both ambition and the fear for granted. The happiness they long for is private, not public. Personal ambition and consumerism are the driving forces in their lives… which convey the idea that human aspirations for liberty, pleasure, accomplishment, and status can be fulfilled in the realm of consumption.’

It is a constant paradox to me that some vets are pleased to buy the latest anaesthetic machine, yet will put off being happy until they retire. Is there confusion, or even guilt, about gratification? Surely immediate gratification is only hedonistic when our desire are sensual or physical? If we want to be more knowledgeable, happier, compassionate, fulfilled, why the wait? We run around killing so much time pursuing, one wonders if it is fast becoming an endangered species. Does having the bells and whistles of the latest surgical equipment make for better practice? Could that time be better spent elsewhere, such as improving our skills at being better managers of time? As Wittgenstein once said, ‘if we take eternity to mean not infinite temporal duration but timelessness, then eternal life belongs to those who live in the present.’ People are always telling us that if we want to live we must wait, but what are they waiting for? We suffer guilt spending time with family and friends, at self-improvement, yet without it we spend forty years at a job eroded of meaning.

Gratification deferral has been a primary method for teaching children to study and achieve good marks. Academic achievement has been shown to be positively correlated with high but realistic parent expectations for children’s school performance. Parents’ estimates of their children’s ability have long-term influence on achievement that exceed secondary school marks and may well linger into their fourth or fifth decade of life. It has also been shown that parental knowledge of children’s current schoolwork and school activities affects parents’ ability to set realistic expectations for children’s performance. Parents’ verbal expectations for continued achievement and urging children to work hard in school (i.e., defined as press for achievement) have been shown to directly influence student achievement and that parent expectations for deferral of immediate gratification to achieve long range goals are correlated with more successful school outcomes.

For example, can we teach our children to be virtuous with the hope they may find happiness through this endeavour? In general terms, what the evidence suggests is this: the more we reward people for doing something, the more likely they are to lose interest in whatever they had to do to get the reward. Extrinsic motivation, in other words, is not only quite different from intrinsic motivation but actually tends to erode it. This effect has been demonstrated under many different circumstances and with respect to many different attitudes and behaviours. Most relevant to character education is a series of studies showing that individuals who have been rewarded for doing something nice become less likely to think of themselves as caring or helpful people and more likely to attribute their behaviour to the reward.

Extrinsic incentives can, by undermining self-perceived altruism, decrease intrinsic motivation to help others. A person’s kindness, it seems, cannot be bought. The same applies to a person’s sense of responsibility, fairness, perseverance, and so on. The lesson a child learns from reward tactics is that the point of being good is to get rewards. Thus researchers have found that children who are frequently rewarded or receive positive reinforcement for caring, sharing, and helping are less likely than other children to keep doing those things. In short, it makes no sense to dangle goodies in front of children for being virtuous. But even worse than rewards are awards, certificates, plaques, trophies, and other tokens of recognition whose numbers have been artificially limited so only a few can get them. When some children are singled out as ‘winners’, the central message that every child learns is this: ‘Other
people are potential obstacles to my success. Thus the likely result of making students beat their peers for the distinction of being the most virtuous is not only less intrinsic commitment to virtue but also a disruption of relationships and, ironically, of the experience of community that is so vital to the development of children’s character.

A study of children’s awareness of self in relationships concluded that children’s sense of belonging plays an important role in their academic motivation and performance. The authors suggested a priority for schools should be to develop quality relationships between students, adults and peer social partners. This view is supported by Beck and Malley who call for a ‘pedagogy of belonging’, stressing human relationships over the demands of competition, grades and scores. A number of scholars have declared that if ‘the political neutrality of schools, education, and school curriculum was a commonplace assumption in the pre-1970s,’ it is obvious that it is no longer the case to anyone who cares to look at the development of education in the 1980s and 1990s. In fact, many authors agree that the fates of society and education are tightly intertwined. Richard Brosio reports that ‘from the time of Horace Mann and the ‘common school’ crusade of the 1840s, schools have had to deal with the conflicting imperatives of democracy and capitalism.’ Effects of this conflict on education have been recorded through the years.

Driving vs. striving

‘Happiness is the art of not striving for happiness’

Chuang Tzu

Though aspiring for wealth, financial security etc, these things while they do give satisfaction are dependent on so many factors. Being virtuous is difficult to quantify; for example, a beautiful partner is a relative thing. Our house begins to need repairs. Our children cease to find amusement in the toys we buy them and are making friends we don’t approve of. We begin to question the wisdom of our striving when we no longer derive pleasure from them. What drives us to achieving? Is it an inner fear, or external peer pressures? Is it merely conditioning or could it be a self-fulfilling prophecy. Spinoza in his book *Ethics* says that,

‘In no case do we strive for, wish for, long for, or desire anything because we deem it to be good, but on the other hand we deem a thing to be good, because we strive for it, wish for it, long for it, or desire it.’

If we ask someone if they know what feeling happy is like, their answer would usually be yes. Yet if we ask someone if they can spontaneously invoke this feeling of being happy right there on the spot, sadly they may fake a smile, but the inner feelings are unchanged. Such a simple request may seem ridiculous, but if we can’t invoke a feeling of happiness any time or any where, why do we rely on an external object or personal to make us happy? This reliance of others for our pleasure is antithetical to self-realisation. It is self-evident that if we wait for someone or something to make us happy, it will be a long time between smiles. Can being happy really be so simple, or is this merely being naïve? This depends on what drives us in life; whether it is a life-sustaining or life-negating instinct.

According to Freud, instincts are psychologically inherited in an evolutionary sense, while needs are biological in nature. Instincts want to abolish the tension created by needs, thus returning to an earlier state of psychological equilibrium. He defines two basic instincts; the life instincts (having as their goal the preservation of life and the species) and the death instincts. Of course, the aim of this instinct is death, or the ‘post-life’ stage of adult development after reproduction.

Happiness resounds from those who are happy - their happiness is apparent to all - and is never subject to external circumstances. It exudes from within, a state of being, of mind and feelings conjoined. The eighteenth-century playwright Samuel Johnson explained it well when he wrote that;

‘All who are happy, are equally happy is not true. A peasant and a philosopher may be equally satisfied, but not equally happy. Happiness consists in the multiplicity of agreeable consciousness.’

This argument assumes that it is better to be a philosopher than a peasant, or to quote John Stuart Mill, ‘better to be Socrates dissatisfied than a fool satisfied.’ But intellectual pride is the only result of such an assumption. Certainly, we may prefer to be Socrates to a fool, or a human to a pig, but this implies we have a choice in the matter, which we do not. The reader can no more become a fool or a pig than a fool or a pig could become human. What matters only is the degree of happiness for the entity in
Since it is known that all living things are capable of maintaining their life and fighting against its end, we can safely say that all living things (i.e. all which possess the building blocks of life – DNA - are capable of fighting for life and resisting their own demise. Studies on plants have shown that they elicit a bio-electrical response to physical trauma. Though such a response is too subtle for human perception, it can be detected with electrical sensors. Whether animals can actively resist their own death is difficult to determine, as their responses are limited to sunlight-responsive growth, temperature-based senescence and redirected leaf/branch/root growth around or through obstacles. Whether or not it is relevant to humans that plants can apparently 'feel' is not in issue. Most of us ordinarily respect wildlife and nature reserves anyhow. As environmentalists, many of us fight for the preservation of rainforests and the deforestation of fragile ecosystems. We may embrace trees symbolically, but do not necessarily care for plants on an individual level. What I am merely trying to show is that our definition of 'life' has far more panoramic diversity than many people imagine. Whether a plant’s response to pain is heard by other plants or animals or even humans does not deny them responding in such a way. To the bio-electrically sensitive, such ‘screams’ when a tree is felled may evoke pain in others, who dream of helping or alleviating their suffering, while others are mutely ambivalent.

To understand what the thought of happiness or a feeling contentment implies, consider the feelings you have when sitting with friends at a party. You are surrounded by like-minded souls whose interests, pleasures and aspirations are similar to your own. You feel a sense of oneness, without a need to impress anyone or be impress. You just enjoy. We are what could be called ‘grounded,’ implying we have a certain degree of self-identity and that we are not alone in the world. We have a relationship with a partner, or our family, with a community and/or professional group. This does not mean that we are apathetic about our life or the dreams and goals we have set ourselves, but that the journey we are on is as important as the final destination. It also understands that a sense of belonging is far more important than a need for belongings. Or, as the Zen masters say, ‘the journey begins here, and ends now.’

How often do we hear of people who are driven by fame or wealth to be successful at the expense of all other things in their life, only to find that when they attain this goal, they find only discontent, isolation and confusion. When you ask a millionaire why doesn’t he/she relax now that they have attained their wealth, they often say that it is not the money which drives them to fortune but a need to feel the power or fame which this lifestyle brings them. There is an epidemic of unhappiness and feelings of emptiness at present amongst wealthy and famous people, due in the main part to not establishing what it is that will make them happy. Success can be an addictive feeling, and though success is commendable, we must remember that nothing in life has the ability to give life. No amount of money or assets or power can give us any lasting pleasure. Adopting a lifestyle which generates an inner sense of peace, or peace of mind is the main way of attaining lasting satisfaction. As has been said many times in the past, there is no way to happiness - happiness is the way. Whatever life brings, whether it is success or failure, we can accept this as just another path in our life’s journey. Though we may never establish the meaning of life (and many millions of human hours have been expended in its investigation), we can at least put meaning into our life. Putting meaning in our life gives us inner peace, and inner peace is priceless.

The art of suffering – ‘why’ versus ‘how’

‘Nothing endures but change.’

Heraclitus

The word suffering has a Latin root meaning ‘to allow’ or ‘to experience’. The Jungian analyst James Hollis writes that suffering is an essential requirement for psychological maturation and that without it one would remain ‘unconscious, infantile and dependent’. But if suffering alone taught, all the world would be wise since everyone suffers. Many people who suffer do not only not become wise, but lose ground in their ability to rationalise their experiences in positive ways. What are the differences then, between those who become bitter and those who become better? Carl Jung insisted that it is not suffering itself but suffering with meaning that is the real scourge of human life. Real suffering (as opposed to neurotic) suffering is an authentic and realistic response to the unfortunate circumstances of life. Instead of searching for happiness, he advised people to rather search for meaning in their life. He wrote in his autobiography, Memories, Dreams, Reflections that:
The world into which we are born is brutal and cruel, and at the same time, one of divine beauty. Which element we think outweighs the other, whether meaningless or meaning, is a matter of temperament. If meaningless were absolutely preponderant, the meaningfulness of life would vanish to an increasing degree with each step in our development. But that is not the case. Probably, as in all metaphysical questions, both are true: Life is – or has – meaning and meaninglessness. I cherish the anxious hope that meaning will preponderate and win the battle.’

While real suffering heals through mourning and meaning, neurotic suffering is a refusal to discover the meaning in our pain. Like a child insisting that things should be as it wants them to be and not as they are, the suffering is self-perpetuating. Neurotic suffering expresses itself as self-pity and envy toward people whose lives seem better, less difficult, than our own. Such unnecessary suffering through self-inflicted wounds is more masochistic than heroic. Jungian analyst Marion Woodman is simple about it: ‘real suffering burns clear while neurotic suffering creates more and more soot’\(^\text{230}\). To Jung, neurosis must be understood, ultimately, as the suffering of the soul which has not discovered its meaning. Ever the optimist, Jung also believed that the whole, authentic person is already there underneath the neurosis. Victor Frankl, in the midst of the hell of concentration camp, realised he had nothing to lose but his ‘ridiculously naked life’. Although we can never stop terrible things from happening, we have every power to change how we will respond to those painful events. All the comfortable illusions we hold dear must be chipped away to reveal the truth. It is our relationship to the events of our life rather than the events themselves that determines how we see them. As the writer Christopher Bovee reports, the same wind that carries one vessel into port may blow another offshore.

The Greek philosopher Heraclitus wrote: ‘No man ever steps into the same river twice, for it is not the same river and he’s not the same man.’ One can conclude from this that if we live long enough, we eventually become a stranger to our old self and inevitable must lose everything in the rivers of change. Without lingering on its pessimistic implications, that we really don’t live in a town called Pleasantville and that tomorrow brings unknown gifts and grief, some essential truths about suffering emerge, namely that:

- change is the natural order of the universe
- change always incorporates loss
- we cannot alter change, only our response to it
- responding to change yields learning

It is far better to embrace this truth than to be stricken by the unexpected. What can truly blindside someone is when changeushers in loss as a result of good things happening. Perhaps that is why there are support groups for lottery winners. Ours is a culture which avoids feeling bad or depressed or sad. We are taught to grasp at the straws of comfort (materials, alcohol, friends) which keep us from changing. Because of the grip our ego has on self-preservation, letting go of cherished habits and friends can take enormous moral courage. Friends offer us easy advice, but the only way out of a fire is through it. Ordinarily, we do not choose the journey. Most often, it chooses us.

The art of happiness

‘Happiness depends, as Nature shows, less on exterior things than most suppose.’

William Cowper

What makes some people happy and others not? Are those who go to work in suits happier and more fulfilled than those in overalls? Do people higher on the socioeconomic ladder enjoy life more than those lower down? The Beatles said that money can’t buy you love, but it seems that it can’t even buy you happiness. People have a remarkable ability to adapt, both to bad fortune and to good, so that one’s life circumstances, unless they are very bad indeed, do not seem to have lasting effects on one’s mood. Yet some people do seem to be happier on average than other people are\(^\text{231}\). Although people adapt surprisingly quickly to good news and bad, the set-point around which happiness varies from time to time apparently differs from one person to another. Personal relationships, religious faith, and the ‘flow’ of working toward achievable goals are determinants of individual happiness. People who enjoy close personal relationships, who become absorbed in their work, and who set themselves achievable goals and move toward them with determination are happier on the whole than people who
do not. Conversely, dysfunctional behaviour exacerbates depression, whereas the things happy people do enhance their happiness. However, the impetus is greater from mood to behaviour than in the reverse direction. It may be that trying to be happier is as futile as trying to be taller and therefore is counterproductive. However, there is no doubt the positive effect humour has on physical and mental health. Being able to self-observe and self-reflect enables the ego to break free from its pathological enmeshment in self. Emotional highs and lows, such as being promoted at work, winning the lottery, failing a subject or being sacked are all likely to diminish one’s feelings of well being. However, the effects of these events appear to be transitory fluctuations about a stable temperamental point or trait that is characteristic of the individual. Middle-aged people whose life circumstances have stabilised seem to be equally contented regardless of their social status or their income.

We cannot speak about happiness without understanding the meaning of resilience. The word comes from the Latin *resilire*, meaning to ‘spring back.’ Resilience implies a kind of toughness and flexibility that harbours the power to maintain or improve oneself, to not be overcome by defeat and to not strive relentlessly for victory. Rudyard Kipling said, ‘Meet with triumph and disaster and treat these two impostors just the same.’ Sybil Wolin, a clinical psychologist, interviewed many people who suffered greatly as children. He identified seven key factors which defined their resilient and functional adult life:

- **Insight** – asking searching questions and giving honest answers
- **Independence** – placing boundaries between oneself and others
- **Relationships** - maintain and develop intimate relationships
- **Initiative** – determination to master oneself and one’s environment
- **Creativity and humour** – are safe harbours of refuge for the imagination
- **Morality** – being willing to demarcate and defend own morals
- **General resilience** – flexibility, confidence and persistence.

When we fall from a horse, we pick ourselves up, catch the horse and remount. There are never thoughts of self-pity or recriminations.

The science of happiness

A lot has been written about the mind-body interconnection. It is becoming increasingly clear that our bodies and minds are two parts of one whole. Research into the nature of neurotransmitters, peptide molecules such as interleukins, interferon and endorphins, and receptor sites has revealed that every cell in the body is capable of responding to chemical messages, which were thought to only exist in the brain. Professor Candace Pert, a leading figure in psychoneuroimmunology at Georgetown University says that research findings make it compelling to believe that the mind and body are separate. It is impossible, she says, to think in such traditional terms and that we should see the human body as a single, integrated entity, the ‘bodymind.’ Laughter, long known as ‘the best medicine’ is shown to lower serum cholesterol, reduce cortisone and adrenaline levels, increase killer T-cells, stimulate release of endorphins and activate T lymphocytes, all of which improve immune function and diminish physical and emotional pain. At the turn of the twentieth century, philosopher William James wrote, ‘we don’t laugh because we’re happy. We’re happy because we laugh’. Dr Lee Berk of UCLA once said that ‘if you took what we know about the capability of laughter to manipulate the immune system, and bottled it, it would need FDA approval.’ As the comedian Bill Cosby said ‘if you can laugh at it, you can survive it.’

Abraham Maslow once said that ‘psychologically healthy people are more able to enjoy, to love, to laugh, to have fun, to be humorous, to be silly, to be whimsical and fantastic, to be pleasantly crazy.’ On a more serious note, he defines happiness as being related to fulfilling needs. Back in the 1940s, Maslow defined what he termed ‘Choice Theory.’ This theory views human behaviour as being dictated by innate needs. No matter what the external stimuli happens to be, it is thought that humans behaviour is predicted by their attempts to satisfy at least one of these needs. Choice Theory defines all human behaviour into five main need categories: survival, love-belonging, power, freedom, and fun.

- **Survival** - air, food, water, body functions, shelter, health, exercise & sex
- *Love / Belonging* - friendship, cooperation, involvement, caring, relationships, connected, companionship, intimacy & collaboration
- *Power* - Importance, competition, recognition, achievement, competence, attention, respect, skills, being heard, impact, pride & significance
- *Freedom* - choices, independence, options, liberty, autonomy, moving around (physical, psychological)
- *Fun* - enjoyment, pleasure, learning, relaxation & laughter

These innate desires, or impulses, push us to action. The objects that eventually become important to us, because they satisfy our needs, vary from person to person. These impulses are thought to be dormant, or suppressed, acting statically, until they are able to be satisfied. And when release is withheld or denied, frustration and negative emotion are felt. Frustration and negative emotion are often expressed as behaviour and considered to be harmful to self and others.

Some scientists argue that humans are intrinsically self-referencing; that is, we act out of desire and choice (i.e. ‘free will’ is coloured by prior urges; no urges = true ‘free will’). Behaviour that is purposeful can be influenced by urges that are either satisfying or constraining. Something that is intrinsically satisfying or constraining is determined by these basic needs. We can act then, either out of self-interest or interest of others. We can’t help being self-referencing to begin, yet we can still be considerate of others at the same time. While Aristotle talked about the human ‘good’ life, modern psychologists talk about the human ‘flourishing’ life. Both are based on striving to an ideal of moral and intellectual excellence. Flourishing, like Aristotle’s ideal person, is a learned process. As our desires are trained and habituated toward higher voluntary ideals, they are more likely to generate lives that involve ‘activity that is intelligent, fair, sober, enterprising action in and upon a material and social environment.’ Aristotle teaches that we need four things to be truly and fully happy:

- the moral virtues related to social relations,
- the intellectual-spiritual virtue of contemplation,
- sufficient wealth that allows us to meet the needs related to food, clothing, and housing, and
- good fortune that frees us from disease and debilitating accidents.

Without the moral virtues, the capacity for full contemplation is diminished. Without the calming and quieting effect that the virtues have on our passions and actions, there can be no real, soul inspiring, soul-purifying contemplation. True contemplation, Aristotle wrote 2,500 years ago, has a reciprocal relationship with the social virtues. ‘Our love of (contemplation) is not a species of practical wisdom (as for the moral virtues), rather it is an cognitive attitude which colours our motivations and helps us achieve ‘good’ by letting reason rule.

Disenchanted with the rigour of working toward happiness, human medicine’s approach in the twentieth century has been focussing on a pharmacological relief of psychological malaise, often with negative impact. Amelioration of unhappiness through pharmacological agents does not necessarily equate with states of happiness. Paradoxically, the absence of psychological pain does not mean psychological health. Sufficient evidence is now available which shows that drugs such as Prozac blunt positive emotions rather than merely reducing negative ones. Published case reports show that many human patients taking selective serotonin re-uptake inhibitors (SSRI) experience diminution in emotional responsiveness. These patients report less ability to cry, reduced irritation, appear to care less about others’ feelings, and experience less sadness, erotic dreaming, creativity, surprise, anger, have more difficulty expressing their feelings, worry less over things or situations, and have reduced sexual pleasure or interest in sex. Emotional blunting is an under-appreciated side-effect of SSRIs that may in fact contribute to treatment non-compliance and/or reduced quality of life.

So think again before taking a pill to kill the spill of unwanted feelings. It may be doing you more harm than good and require more effort to resolve than dealing with the emotions in the first place.

**The heritability of happiness**

> What you have inherited from your fathers, earn over again for yourselves or it will not be yours.
>  
> Goethe

How much do family environment and genetics play in our ability to achieve true happiness? Apparently, it is a considerable component of the type of personality we posses as adults, and genetics alone, even without the direct influence of family, does influence our basic outlook on life; whether we
are extrovert, introvert, optimistic, or pessimistic. Realisation of one’s true potential (a measure of one’s happiness) has been shown to be effected by six factors; autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relatedness. These six aspects of self define how well we realise our potential as an individual at an emotional and physical level. Abundant evidence points to the pursuit of happiness as directly influencing specific physiological systems relating to immunological functioning and health promotion. Though it has been suggested that it is an intrinsic part of human nature to strive for happiness, the steps we take to achieve it are influenced directly by our childhood experiences and emotional skills at manipulating experiences. Having the ability to act with emotional autonomy and competence, and having dexterity at relatedness with others is essential for vitality and fulfilling self-needs. Wanting to be happy is a normal and universal theme of being human, but the methods we choose are unique and determine the sort of person we become and the depth of satisfaction we achieve emotionally and spiritually.

Those who are by nature extroverted and agreeable with others are more likely to show ‘happiness’ traits (being positive, strong interpersonal bonds and successful) whereas those who are pessimistic and neurotic are less likely to express happiness. However, the motivation behind our actions are pivotal to our demeanour. For example, it has been shown that being conscientious at work (where the motivation is for financial reward) does not correlate with any positive feelings of happiness associated with the actions. On the contrary, those who are pessimistic are not only consistently unhappy, their unhappiness is more likely to be of genetic origin and run in families. It pays then to investigate our experiences in a more positive light and be less responsive to negativity of feelings and thoughts.

However, the most important issue to remember is what we define as happiness. Do we consider it to be derived from wealth, fame, or praise? Unfortunately, none of these factors have consistently shown to be positive predictors of happiness. If being rich and famous were the keys to happiness, thousands of Hollywood psychiatrists would be out of work. Focussing on financial and materialistic goals directly reduces well-being. This result has been confirmed both in developed countries such as the United States and Germany and in less economically developed nations such as Russia and India. Furthermore, both cross-sectional and longitudinal studies suggest that, whereas progress toward intrinsic goals enhances well-being, progress toward extrinsic goals such as money either does not enhance well-being or does so to a lesser extent. In the long run, wealth is like health: Its utter absence can breed misery, but having it doesn’t guarantee happiness. The relationship between money and well-being is in part a function of the loss of autonomy associated with a wealthy lifestyle. Just as comparing ourselves with those who are better off creates envy and consumerism, so comparing ourselves with those less well off boosts our contentment. In one study, even just imagining and then writing about various personal tragedies, such as being burned and disfigured, led the participants to express greater satisfaction with their own lives. The good news about the advent of twentieth century materialism and consumerism is that it has given us a unique window into the workings of our mind, in particular its mordant attachment to materials which seem to only worsen the mind’s craving. Realising our mind’s attachment to white goods may be the first step in liberating these tendencies from our mind for good.

Seligman, who has a rather unusual approach to understanding happiness remarks;

‘It is not just positive feelings we want, we want to be entitled to our positive feelings. We have invented myriad shortcuts to feeling good; drugs, chocolate, loveless sex, shopping, masturbation, and television are all examples. The belief that we can rely on shortcuts to happiness, joy, rapture, comfort, and ecstasy, rather than be entitled to these feelings by the exercise of personal strengths and virtues, leads to legions of people who in the middle of great wealth are starving spiritually. Positive emotion alienated from the exercise of character leads to emptiness, to unauthenticity, to depression, and, as we age, to the gnawing realisation that we are fidgeting until we die.’

Albert Einstein, ever the pragmatist, declared that, ‘well-being and happiness never appeared to me as an absolute aim. I am even inclined to compare such moral aims to the ambitions of a pig.’ He saw it as something more nebulous than external physical satisfaction. Something which is not achieved by the sublimation of physical urges (e.g. asceticism), but by realising achievable self-goals and helping others. Happiness thus seems not so much getting what we want but wanting what we have.
The interdependence of happiness

Can a person in isolation be happy? There is a saying in Hollywood that if you don’t have happiness, you send out for it. That it is a takeaway commodity – expendable, renewable and recyclable. Though exceptions often prove the rule, what Hollywood says underlines the truth that most people get their true happiness at home. That is, from loved ones. There has been increasing appreciation within psychology of the fundamental importance of warm, trusting, and supportive interpersonal relationships for well-being. So important is interpersonal relationships (what has been called ‘relatedness’) that some theorists have declared it essential for well-being. Having for example, a stable, satisfying relationship is a factor actively promoting longevity. Of all the factors influencing happiness, interpersonal relationships factor in as being at the top of the list. Personality traits which foster interpersonal bonds (e.g. friendliness, positivity and genuineness) are thus most strongly indicative of happiness and longevity. Loneliness is consistently related to poor mental health, reduced life satisfaction and reduced longevity. Research on interpersonal intimacy also highlights that it is the ‘quality’ not ‘quantity’ of interpersonal relationships which engenders well-being. These qualities act at the physiological level by increasing secretion of oxytocin, reducing secretion of cortisone, and producing positive changes in autoimmune system function.

It is the attitude with which we approach life that matters. Feeling competent and confident with respect to valued goals is associated with enhanced well-being. Furthermore, it is clear that goal progress, on average, predicts enhanced well-being, particularly goals that are rated as important. The past decade has witnessed tremendous advances in lifespan psychology and some of the most intriguing findings concern well-being. Indeed, seemingly anomalous findings in longevity studies have generated many new understandings of the dynamics of well-being. Perhaps the most salient of these is the so-called paradox of aging. It has been found that in old age subjective well-being does not decline, but in fact generally increases despite evidence that with age comes many challenges and losses. In young adults, happiness is idealised through self-knowledge, competence and self-acceptance whereas for older adults (>50 years old) the focus shifts to more interest in relationship depth and developing poignancy of meaning in their life. In recent years, a shift in western people young and old has been to pursue physical health as a goal of defining meaning. Good health has become more than a means to personal goals such as greater attractiveness and increased longevity. For many, it also symbolises self-control, hard work, ambition, and success in life. Inherent in this symbolism is the concept that the individual controls behaviour, which in turn controls health. Although control over one’s life plays an important role in both physical and mental health, the concept of personal control also infers responsibility. Positive attributes are accorded to people who are healthy, but those who fall ill, or those with less than the perfect body, are blamed and are thought to be self-indulgent, lazy, or even irresponsible and immoral. There is a tendency to overstate the impact of personal behaviour on health. Being fit will make you healthy and is essential for stress management in busy practice environments, but it won’t necessarily make one happier in meaningful or lasting ways.

One factor which definitely seems to influence happiness on a personal level is the degree of personal and social freedom. Sen, a Nobel Laureate in economics, concludes that freedom is a more rational goal for national development than is gross national product per se. His analysis shows that in cultures where relative freedoms of expressing sexual, religious, cultural and racial needs have been expanded, both quality of life and economic growth are enhanced. People active in organised religion (not self-fashioned spirituality) are also less likely to become delinquent, abuse drugs and alcohol, to divorce or to commit suicide. Part of the reason has to do with social support from others in a congregation, but looming larger is a sense of meaning and guidance. In one study, people who said they felt ‘close to God’ were significantly more likely to consider themselves ‘very happy’. Psychologists posit that such a connection is another form of intimate relationship or that it helps people feel closer to loved ones or both. To sum up these findings, reliable predictors of happiness include being in an intimate (not necessarily sexual) relationship that we consider stable, being able to perceive how we make a living as a vocation or a calling rather than simply as a job or work and believing in something larger, or higher, than ourselves.

The journey is the destination

'Happiness in this world, when it comes, comes incidentally.
Make it the object of pursuit, and it leads us a wild-goose chase, and is never attained.'

Nathaniel Hawthorne

Are veterinarians today any more angry or dysfunctional than the members of other professions? Not according to most statistics. Compared to veterinarians, lawyers seem to be the unhappiest of any occupational group (with female attorneys ranking at the absolute bottom in measures of happiness and gratification). So the next time you find yourself in an especially ugly or dull consultation, take solace that you’re not working in a law office.

When it comes to anger management, no amount of reading about it will overcome ingrained attitudes and habits that have been present for years. For some people, it is as if their anger dug out for itself a deep channel, so future angers could follow more easily. Anger cannot be hidden, it can only be dissembled. The only way to deal with chronic bad habits is by slowly replacing them with action. Being diligent and patient are tantamount weapons to overcoming. Knowing the way out of a puzzle is one thing; the next is the walking. As the Buddha says in the King of Concentration Sutra:

‘Just as we cannot quench our thirst by listening to the sound of water and watching it flow past; so we cannot overcome our suffering simply by listening to teachings and understanding them intellectually without meditating on them.’

Deferring emotional well-being is not the answer either. Happiness that is restricted to after-hours leisure limits its accessibility. It is difficult psychologically to seek fulfillment only in some things and not others. How then do we find happiness from our professional pursuits when it occupies a significant part of our waking moments? Much research has shown that a positive outlook, realistic goals, developing meaningful professional relationships and accommodating age-related changes in our career needs are pivotal to attaining professional satisfaction.

Superficially, unhappiness can result when we want to see a particular television show and it is cancelled, or someone cuts into your carpark at the shopping centre. These are not situations which lead to long term unhappiness, unless of course we choose them to be. As we have discussed earlier, emotional unhappiness originates from conflict. All conflicts are relative. Some conflicts are critical to life - such as seeking shelter, food, water and avoiding physical pain. Others, however, are negotiable at an interpersonal level. It is fascinating that some people were devastated by the stock market crash of 1997, yet others at the same time were devastated to hear that their rent had been increased by ten dollars a week. Conflict is thus a relative thing.

At deeper emotional levels, unhappiness is usually triggered by suppressed or forgotten conflicts, which by their very nature are difficult to recall at the moment of emotional resurgence. These conflicts lie hidden, and often trigger ‘unexplained’ or disproportionate emotions such as anger, anxiety, jealousy, fear of abandonment, blaming/judging of others, sudden tears, recurrent sickness, phobias, anxieties, sexual dysfunction, sleep difficulties/insomnia, bouts of depression, recurrent negative behaviour patterns, loss of memory, etc. More vague emotional symptoms may be expressed such as a feeling of emptiness, boredom, meaningless, or feelings of failure, loss, and incompleteness – what has been called a ‘spiritual ennui.’

Two humans in similar circumstances may cope differently, with one of them developing little psychological conflict from an event, while another may be permanently scarred. This definition is true whether we speak about humans or animals. The cognitive analysis of trauma is usually a ‘post-traumatic event.’ We analyse the events. Animals also do the same. Humans, however, become bogged down in the cognitive analysis of these events (what psychologists call the paralysis of analysis) to the point of suppression, amnesia or lethargy.

Unhappiness can always be traced back to ‘holding onto’ something in our life that is beyond us to control, or of not recognising a traumatic event and gaining a deep insight and liberating our emotions from that event. We assume that we have control on our love life, our friends, our position in society, our professional career, our money or our knowledge. But this is a false perception which ignores the temporal laws of nature. Change is inevitable. Ultimately, we must try and learn to let go now of those emotional conflicts which are no longer beneficial for our daily survival. Emotions which brew unnecessarily long begin to sour like over cooked food and eventually poisons our constitution rather than benefiting it.

Venting redundant emotions (perhaps a long-standing grievance with a sibling) is as a positive
step toward psychological health. Yet venting these emotions such as in ‘rage therapy’ which was a popular therapy in the 1980s is ineffective at effectively resolving inner emotional conflicts. Clearing unwanted emotions by resolving them takes considerable practice. As Cervantes once said, ‘the road is always better than the inn.’ To avoid the journey of purifying oneself of unwanted emotions merely postpones the work. Recent studies have shown that destructive emotions, including chronic anger, jealousy and depression, are malleable to positive emotional intervention, achieved through counselling and therapies such as hypnosis, meditation, creative visualisation. This is the beginnings of emotional resolution and transformation.

Resolving emotional conflicts or ‘letting go’ should not be confused with not caring. In fact it is quite the opposite. Not caring is an act of dispassion, and life should be anything but dispassionate. Life is either neutral or passionate and it seems little in between. This does not mean we have to be passionate about everything. We are not passionate about eating cornflakes, but we should be passionate about getting in touch with the real ‘u’ inside ‘us.’

Nothing in the universe happens in isolation. The knock at the front door to your clinic is an event that began many years before when you decided as a youth to pursue a career and hence went to university, got a degree and began work, thus giving yourself a career that led to clients and work. That knock at the door was your choice and no one else’s. Blame does not exist in the vocabulary of someone who accepts full responsibility for their actions. We should try and accept everything which comes our way, good and bad, for in not distinguishing between good and bad, they are merely experiences which come and go and don’t weigh as heavily on our hearts.

Rumi, the thirteenth-century Sufi mystic elegantly described this truth about life;

\[
\begin{align*}
\text{This being human is a guest house,} \\
\text{Every morning a new arrival.} \\
A \text{ joy, a depression, a meanness,} \\
\text{Some momentary awareness comes} \\
\text{As an unexpected visitor.} \\
\text{Welcome and entertain them all!} \\
\text{Even if they’re a crowd of sorrows,} \\
\text{Who violently sweep your house} \\
\text{Empty of its furniture,} \\
\text{Still, treat each guest honourably.} \\
\text{He may be clearing you out} \\
\text{For some new delight.} \\
\text{The dark thought, the shame, the malice} \\
\text{Meet them at the door laughing,} \\
\text{And invite them in.} \\
\text{Be grateful for whoever comes,} \\
\text{Because each has been sent} \\
\text{As a guide from beyond.}
\end{align*}
\]

Being non-discriminatory with events is one thing, yet it also pays off to be the same way with people. The American psychologist Paul Ferrini says that we need to recognise that each of us mirror in others our own fears and insecurities and that a healthy partnership can only exist through allowing the other person freedom to pursue their own growth. In judging others, we are in fact merely judging ourselves; like poking faces at ourselves in the mirror. People appear to be happiest in their relationships when they believe they have found a kindred spirit, someone who understands them and shares their experiences. People in satisfying and stable relationships assimilate their partners to themselves (a form of egocentrism), perceiving similarities that might not be evident in reality. Such a process creates greater feelings of being understood, and ultimately finding satisfaction in the relationship. Essentially, our deepest loves are with those who allow us to reach out an touch those parts of ourselves we need so desperately to touch, those tender, fragile parts of ourselves we can only reach through other’s help. Though this sounds mind-blowing, it also resonates with validity. According to the need theory of Abraham Maslow, attaining satisfaction in a relationship is through self-satisfaction, or having someone who can share our need for self-satisfaction in psychologically-
According to Maslow, each person has needs and there is a particular sequence in these needs starting with the lower physiological needs, such as hunger, thirst and safety, and building up to the highest needs; maximally developing one’s cognitive, emotional and social competences, or what he called ‘self-actualisation.’ Achieving self-actualisation is accompanied by a number of specific personality characteristics, such as openness to experience, empathy and tolerance towards others, creativity, high self-confidence and self-esteem.

Ultimately, pursuing happiness is about motivation. About wanting to pursue a life which provides fulfilment and satisfaction. In short, wanting to change is the key.
Communication

Ability to relate effectively and accurately with people, regardless of social status
Ability to comprehend accurately the needs and wishes of others

‘Words are, of course, the most powerful drug used by mankind.’

Rudyard Kipling

‘When anyone speaks to me, I listen more to the tonal modulations in his voice than to what he is actually saying. From this, I know at once what he is like, whether he is lying, whether he is agitated or whether he is merely making conventional conversation. I can even feel, or rather hear, any hidden sorrow. Life is sound, the tonal modulation of speech.’

Leoš Janáček

Communication is perhaps the most important part of veterinary practice. If we cannot express ourselves to others, whether they are peers, employees/employers or clients, then our inner thoughts, needs, dreams and aspirations are frustrated and denied value. We subvert our healthy emotional repertoire every time we swallow our feelings just ‘to keep the peace,’ to not show our inferiority/superiority, or in order to not hurt someone. In a world where people talk an ocean of words, breathlessly and often meaninglessly, it’s not hard to feel becalmed on a ‘sea of blah.’

Why is it that some people say very little and yet people listen to them while there are others who shout and are never heard. Effective communicators seem to have an innate rapport with others, and able to say what’s on their mind without causing hurt, fear or inciting anger. Being approachable means not only saying what one’s mind, but allowing the other person to feel that they too can speak their mind without fear of recriminations. Many books have been written about the art of communication. It is arguably the most important skill in this generation where our voice is easily swamped by the noise of advertising, consumerism, a perception that ‘time is short,’ and where acronyms and cliches replace meaningful dialogue. We do not want to become a mute surgeon who works in isolation from the public any more than we should aspire to be snake-oil salesman with questionable ethics. Neither is beneficial to our emotional well being. There is a middle way of balancing the two.

A few truths about effective communication are:

- Communication has primary, secondary and tertiary values
- Communication is temporal and regional
- Communication broadcasts internal states
- Communication which causes conflict indicates emotional dissonance

As we shall discuss in this chapter, in order to communicate we need to maximise the way in which we interact with others, not only in speech but also body language. If what we are saying comes from a genuine emotional source, then body language must comply with this state. The first effect communication has is not on others but on ourselves. Simply put, we become our words. Telling lies invariably leads to self-deception. Some people ignore this and focus on the secondary and tertiary effects of communication, which are the effect our words have on others (secondary), and the effect our words have to on those around the listener (tertiary; such as family, friends etc). Thus, word-of-mouth reputation is a tertiary effect of how we communicate with clients, which is determined by how we primarily ‘self-communicate.’ Self-communication is the inner self-dialogue; whether this be an openness and self-appraisal of ‘warts and all’ and self-honesty, or a denial of weaknesses and of blaming...
All three forms of communicating are intimately related, and inner deceptions and lies cannot but be broadcast to the world outside ourselves. This emphasises the importance of practising what we preach, because adhering to a code of personal ethics allows us to be fearless about the repercussions of our actions. We can know that even if we have to face a client in court, our conscience is free from guilt. And what’s even more important, we can sleep peacefully at night.

Think before you speak

‘All our words are but crumbs that fall down from the feast of the mind.’

Kahlil Gibran

Most people can’t help but judging what others think by what they say. In fact, what other method can you know what another person is thinking? How, without language, can you know what you yourself are thinking? Language, as a symbol, determines much of the nature and quality of our experiences. Expressive language as a prerequisite for thought is deeply embedded in human culture. This began as early as the ancient Greeks, who used the word *logos* to signify both thought and language and was generally accepted, even throughout the Enlightenment period. Plato declared that ‘a power greater than man assigned the first names to things.’ Hermogenes and Socrates maintain that language is instead an arbitrary set of systems that have evolved by ‘usage and custom.’ In the Gospel According to St John, the Word is not only with God, it is God. Shakespeare intones that a rose by any other name would smell as sweet. And Medieval history is replete with examples of how those without language (i.e. mutes) were sub-human brutes or at best childlike beings whose only salvation lay in learning how to speak properly.

Even Immanuel Kant was not immune to what has been called the metaphysics of the human voice. He wrote that ‘the dumb could never attain the faculty of reason, only at best an analogy of reason.’ The barbarity of comparing mute humans to animals has only in the twentieth century been quashed. But the residue lingers; we still equate an inability to speak with intellectual inability. This is as belittling to animals as it was for mutes, but for different reasons; a mute wants to speak but can’t, whereas an animal doesn’t want to speak. In the early twentieth century, the structural linguist Ferdinand de Saussure was categorical about this; language and thought were inseparable.

The speechless (stroke) patient has lost speech, not only in the popular sense that he cannot speak aloud, but in the fullest sense. We speak not only to tell other people what we think, but to tell ourselves what to think. Speech is a part of thought.’

They believe that aphasics (such a mutes and stroke victims), unable to talk, are comparable to dogs. Bertrand Russell said that just because a dog can’t tell you it came from a poor home doesn’t mean that it lacks consciousness, but Wittgenstein maintained that misuse of language was at the root of all philosophical problems. He said that a dog could not have the thought ‘perhaps it will rain tomorrow’ and therefore did lack consciousness. Because there are many kinds of high-level thinking that bypass words altogether – master chess players, mathematicians, physicists – not all philosophers are comfortable with the identification of language with thought. Liebniz was greatly troubled that ‘I can never acknowledge, disprove or prove any truth except by using my mind words or other things.’ In 1751, Diderot declared that ‘words conceal much of the warmth and richness conveyed by more primitive expressions. We are hanging up our souls in chains of syntax.’ Berkeley was more categorical; words were the great impediment to thought. Aristotle believed that images as well as words must play some part in thinking. Einstein famously described solving problems ‘before there is any connection with logical construction in words or other kinds of signs which can be communicated to others.’

Clinical evidence now suggests that although language and consciousness are intricately interwoven, they are not one and the same. For example, Alzheimer’s patients in severe dementia still retain speech abilities, and profoundly amnesiac patients retained their language. Even Chomsky demonstrated to his scientific peers that thought and language are dissociated faculties:

‘The idea that thought is the same thing as language is an example of what can be called conventional absurdity; a statement that goes against all common sense but that everyone believes because they dimly recall having it heard somewhere and because it is so pregnant with implications. People do not think in English or Chinese or Apache; they think in a language of thought.’
However, the rather outdated and squarish paradigm remains in scientific circles that animals without language must by inference lack a conscious mind. What is dumb, they believe, can only be dumb or dumber.

**The origins of language**

*He who knows does not say;*  
*He who says does not know.*  
*Lao Tzu*

What caused humans to change from the animal grunts of our predecessors to the multifaceted tongues present in society today? Obviously there are many forces which shape the evolution of languages, but human language probably emerged as a social need to communicate complex ideas between individuals. All animals, from ants to antelopes have a language that serve the needs of the individual and the social hierarchy. Obviously the more complex the social order of a species, the more subtle and complex the language. That’s not to say that a colony of one million ants use smiles, laughter, slang or sentences containing adjectives, verbs and nouns to communicate. It is possible they do, but we are yet to prove it. It is obvious that language also depends on what needs to be communicated. What humans have that ants don’t is a highly adaptive larynx, a tongue to regulate speech and an abstract mind to communicate and satisfy far greater psychological as well as physical needs. If ants do have psychological needs, we have no concept of how they express it, if at all. Thus language has become the flagship of not only social superiority but also intellectual. Language has become the vanguard of sentience. What is intimate in the human psyche is that what cannot be communicated does not exist. We deny a dog’s grief if it cannot express sadness over its master’s death. To scientists, language and sentience are synonymous. But rather than agreeing to this, it is perhaps prudent to take a more ethical position of assuming that what is not communicated is undetectable or invisible rather than invalid.

But to explain how I arrive at this assumption, let us begin with what we know about language. Charles Darwin’s *The Expression of the Emotions in Man and Animals* is considered the reference point for research into emotion, facial expression and language. His magnum opus on how humans and animals display such emotions as fear, anger, disdain, and pleasure has been sustained by later scientific research. Since Darwin’s time, considerable evidence suggests that language did evolve from some primitive origins and that it emerged suddenly rather than slowly. Ferrer i Cancho & Solé proposed that human communication underwent a ‘phase transition,’ like solid ice melting to liquid water. They argue that the richness of human language is a fine-tuned compromise between the needs of speakers and of listeners. Just a slight imbalance of these demands prevents the exchange of complex information. Languages between those of present-day humans and the limited signalling of some animals cannot really exist. There must, at some point, have been a switch from rudimentary to sophisticated language. This contrasts with some linguists’ view that language evolution was a gradual affair in which new words accumulated steadily. Human language appears to emerge suddenly at some pivotal point and when it emerged, the frequency of word usages develops a distinctive mathematical form, called a power law. The power law disappears on either side of the communication jump. It has been known since the 1940s that human languages do indeed show just this kind of statistical distribution of word usage.

Recent studies suggest that not only is the evolution of language dependant on social evolution but also on cellular evolution. The concept of cell language has been recently defined in molecular terms and found to be similar to the sound and visual signal-based human language. Biocybernetics, a general molecular theory of living systems developed over the past two and a half decades, is found to provide a physical theory underlying the phenomenon of cell language. The isomorphism between cell and human languages suggests that the DNA of higher eucaryotes contains two classes of genes - structural genes corresponding to the lexicon and ‘spatio-temporal genes’ corresponding to the grammar of cell language. The former is located in coding regions of DNA and the latter is predicted to reside primarily in noncoding regions. The grammar of cell language is identified with the mapping of the nucleotide sequences of DNA onto its 4-dimensional folding patterns that control the spatio-temporal evolution of gene expression. This theory suggests the possibility that human language may well be founded on cell language.

Throughout the debates on the cognitive capacity of animal, two issues have constantly
recurred; the problem of other minds and the problem of reduction of mental events to physical events. Recent developments have provided new perspectives on both issues. Firstly, to ascribe consciousness to oneself presupposes ascribing it to others, and conversely. Such an ascription requires criteria (e.g. vocalising intentions, moods, feelings, etc), which must be communicable to others. Hence, we cannot consider ourselves to be conscious unless we consider others to be so and the argument by analogy leads both from and to our own mental states. This does not solve the further problem of finding precise criteria for ascribing consciousness, intentions, or actions to other persons or to non-language-users, but it does eliminate the most serious philosophic barrier. The problem of language remains crucial; on the one hand, evolutionary continuity means that the analogy from and to our own consciousness must extend down the evolutionary scale; on the other hand, it has been said that the possession of a public language is a prerequisite for calling an organism rational since the public criterion of rationality is the ability to make general statements and statements about the past. Thus, we confidently believe in continuity but cannot demonstrate it scientifically. However, this is an empirical issue depending on advances in the study of the evolution of language in animals and our ability to translate from animal languages or protolanguages (e.g. used by primates) into our own. The second issue is whether one wants to ascribe mental states to any organisms. It forces the observer to decide what behaviour shall count as a valid test for identifying a given response or class of responses. Arguably, this analogy to subjective human psychology employs teleological and intentional concepts. Thus, some aspects of the concept of mind in animal and human psychology have not yet been shown to be entirely reducible to the units of physics and chemistry.

Gestalt, a pioneer in human psychology, was the first to envisage mental activity in terms of interactions between parts of the brain rather than discrete elements; rather like music whose patterns of melody and cadence are greater than the sum of their parts. John Watson, founder of animal behaviourism in the USA that the private realm of mental states was beyond the reach of science and therefore must be explained solely by observable behaviour; the animal in pain groans. Words like feelings, mind, consciousness, reason were taboo. The fundamental assumptions of behaviourism were that all living organisms, from amoeba to humans, are essentially the same differing only in complexity, and that all complexity is reducible to environmental conditioning that caused it. Language was thus nothing more than one way of observing behaviour.

Since Paul Broca’s momentous discovery that humans speak using the left hemispheres of the brain, philosophers have been grappling with the apparent paradox that the human mind is a product of the brain. Thomas Huxley found it difficult to accept, like most people, ‘that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue.’ We assume that our feelings, wishes, intuition and skills are more than neurophysiology, but it is unlikely to be so. The Russian neuropsychiatrist Alexander Luria formulated a new concept of language which drew on I.P. Pavlov’s theory about the dynamic nature of organic function; proposing that constricted cortical areas undoubtedly contributed to language but were only parts of a complex network of sub-components which process all cognitive functions, a theory still prominent today. Experiments using new techniques such as magnetoencephalography (MEG) now show that the classical language zone in the left hemisphere is only part of the picture. Virtually every part of the brain has been implicated in language development.

The first pioneer of understanding the phonetic evolution of human language was the Russian psychologist, Lev Semyonovich Vygotsky, who studied the effect of cognitive development on language. His writings emphasised the roles of historical, cultural, and social factors in cognition and credited language as being the most important symbolic tool provided by society. His *Thought and Language* (1934) is a classic text in psycholinguistics. Vygotsky compared inner speech ‘to the other side of the moon.’ It is, he remarked, a speech without words. While in external speech thought is embodied in words, in inner speech words die as they bring forth thoughts. Most of us use inner speech when for example we are trying to remember a phone number. It seems that inner speech is necessary for short term memory that acts as a buffer, holding words until they are ready to be used. The Dutch psycholinguist Willem Levelt envisages a ‘double perceptual loop’ in the language system, by which inner and external speech are ‘perceived and parsed.’ Unfortunately, he was unable to apply his theory to explain ‘auditory streaming’ – the so-called cocktail party syndrome, where we can hold two or more conversations at once and differentiate between them. It took a linguistic genius by the name of Noam Chomsky to tackle this most important work. Chomsky developed a theory of transformational (sometimes called generative or
transformational-generative) grammar that revolutionised the scientific study of language. He first set out his abstract analysis of language in his book *Syntactic Structures* (1957). Instead of starting with minimal sounds, as the structural linguists had done, Chomsky began with the rudimentary or primitive sentence; from this base he developed his argument that innumerable syntactic combinations can be generated by means of a complex series of rules. According to transformational grammar, every intelligible sentence conforms not only to grammatical rules peculiar to its particular language, but also to ‘deep structures,’ a universal grammar underlying all languages and corresponding to an innate capacity of the human brain. Chomsky and other linguists who built on his work formulated transformational rules, which transform a sentence with a given grammatical structure (e.g., ‘John saw Mary’) into a sentence with a different grammatical structure but the same essential meaning (‘Mary was seen by John’). Transformational linguistics has been influential in psycholinguistics, particularly in the study of language acquisition by children. In the 1990s Chomsky formulated a ‘Minimalist Program’ in an attempt to simplify the symbolic representations of the language facility. What has been learnt since Chomsky’s work is that human languages evolve and compete with each other but those driven to extinction are almost always tongues with a low social status. Chomsky formulated that a ‘language organ’ exists in the human brain which is an innate template built into the nervous system of humans but not animals, which accounts for the astonishing ability of children between ages eighteen and thirty-six months to grasp the property of ‘infinity’ which is exhibited in comprehension of the numbers 1, 2, 3, … etc. Chomsky drew a distinction between ‘competence,’ the idealised knowledge we have for language, and ‘performance,’ the way rules and structure of language are changed when we use language. But without language, how do we know that an animal or person is capable of comprehending abstract ideas? Is an emotional expression of fear or sorrow by an animal equivalent to an ability to comprehend the notion of ‘tomorrow’ or ‘infinity’. Perhaps the only valid assessment of an ability to have abstract thoughts is novel behaviour.

**Speaking of abstractions**

*If it is justifiable to assume that other human beings feel pain as we do, is there any reason why a similar inference should not be justifiable in the case of other animals?*

Peter Singer

Does thought depend crucially on language, as some philosophers maintain, or can abstract reasoning and related capacities exist in the absence of language? Can you think without using words? Indeed, does anything exist without words? Many a politician will argue the point that if there’s anything better than a lot of words, it is even more words. But where does language come to the fore? In other words, how does language give an individual or a group an advantage? The answer lies in the fact that an individual with greater language skills can more effectively communicate this advantage to others, and faster and more accurately. The only conundrum with language is that it requires the skill of abstraction. That is, to conceive of a concept which has no reference to a physical object or specific examples. Ideas that cannot be held in the hand or claw or paw. One can conceive of the idea ‘the sun,’ but it takes an abstract thought to conceive of ‘tomorrow.’

There are many examples to prove that humans can think without language. Evidence includes the ability of young pre-linguistic infants to perceived causation and to make inferences concerning the structure of the perceived world, the reasoning ability of patients with severe language problems caused by brain damage to the left hemisphere, the skills that animals and infants show in combining separate items of spatial knowledge into an integrated spatial map, the capacity of chimpanzees to add unequal arithmetic fractions, the forming of perceptual categories by infants and what might be a contrasting approach by pigeons, evidence for a variety of types of cognition without conscious awareness in human patients, and what may be homologous processes in animals.

Showing an animal’s ability to adapt and solve problems gives an indication of the way that animal is thinking. Learned behaviours are those ‘adaptive changes in individual behaviour which result from experience’. Various forms of learning operate in animals; habituation, imprinting, Pavlovian conditioning and operant/trial-and-error conditioning. Pavlovian conditioning involved the association of events over which the animal has no control. Instrumental conditioning involves associations of events with control. The results of these learning types produce behaviours of differing longevity (*extinction*) and complexity (*potentiality*) that may or may not be transmitted to offspring by non-genetic
(phenotypic) means (memes). But is learning a particular behaviour the same as conceiving of an entirely new idea or behaviour? It could be argued that any abnormal behaviour may in fact be abstract-derived.

Darwin once said that:

‘It would be very difficult ... to determine how far animals exhibit any traces of ... high mental powers. ... If one may judge from various articles which have been published lately, the greatest stress seems to be laid on the supposed entire absence in animals of the power of abstraction, or of forming general concepts.’

More animals may be capable of abstract thought than previously known, with profound implications for the evolution of intelligence. Recently it has been shown that baboons can successfully determine that two differently detailed displays are fundamentally the same in their overall design. Figuring this out required analogical (this is to this, as that is to that) reasoning, which many theorists view as the foundation of human reasoning and intelligence. Moreover, it is clear that some animals (monkeys and dolphins) have functional features of, or parallels to, human conscious metacognition. They apparently know when they know and when they don’t know. We also know that pigeons and primates can conceptualise the notion of ‘same –different’. Animals’ ability to metacognise and/or learn conceptual tasks is consider to be the strongest evidence of abstract conceptual behaviour. To date, only human beings and primates have successfully learned relational matching-to-sample, but future research opens the possibility that more animals may indeed have such abilities. Fagot, who experimented on baboons and showed through trial and error that they are able to identify ‘like’ objects, says that ‘analogical thinking and its possible precursors may very well be found in non-human animals - if only we assiduously look for them.’ Obviously such abstract abilities in animals could never be as rapid, discriminatory or complex, but it does not negate the existence of these skills.

Just why humans are better may relate not just to cognitive skills but to dexterity of language. Extensive research has shown that humans discriminate more; they reserve the verbal response ‘same’ for a much narrower class of stimuli than the verbal response ‘different’. If powers of abstraction exist in animals, its seems probable that they differ merely in magnitude not in kind. Evidence of complex cognitive abilities is what lies behind international efforts to win certain ‘human’ rights for animals; the right to life, the right not to suffer cruel or degrading treatment, and the right not to take part in all but the most benign experiments. The idea is simple: To include animals within the community of equals by granting them the basic moral and legal protection that only human beings currently enjoy. Language may be necessary for abstract thought, but Singer preferred to believe that that pain is a more primitive experience and has nothing to do with language. Human infants are unable to use language. Are we to deny that a year-old child can suffer? If not, language cannot be crucial. Many now work for the removal of animals from the category of ‘property’, and for their inclusion within the category of persons. Such utilitarian arguments are tantamount to treason in most scientific circles, and so the debate over ‘suffering versus the ability to express that suffering’ continues in ever widening gyres.

**The Meme Machine**

What makes humans special in comparison with other animals is our extraordinary capacity for imitation. Imitation is the linchpin of meme transmission, and as evidence for imitation in animals is weak, humans alone can be regarded as possessing and transmitting memes. A meme has been defined as ‘an element of a culture that may be considered to be passed on by non-genetic means, esp. imitation’.

A classic meme is the spread of milk bottle opening in British tits and seasonal bird songs. Although many scientists argue whether such an example proves the existence of imitative behaviour, the argument could equally hold for humans, that all transmitted behaviour is merely socially imitative rather than learned. There is little doubt that animals regularly acquire learned information from one another. The term ‘social learning’ refers to learning that is influenced by observation of, or interaction with, another animal or its products. Experimental investigations have revealed that imitation is just one of several processes that can result in social learning. There exist numerous reports of novel behaviour patterns spreading through animal populations through social learning processes. Famous cases include termiting in chimpanzees, food washing in Japanese macaques, the opening of milk
bottles in British birds, dietary preferences in rats, birdsong, and fear of snakes in rhesus monkeys. In the majority of cases where the transmission process is investigated, behaviour patterns are not transmitted by imitation, but instead result from other, simpler processes such as local enhancement, where an animal’s attention is drawn to an object by the actions of another, in a manner that results in learning. Yet animals clearly have behavioural traditions based on acquired information transmission. Moreover, many of these animal traditions appear to change over time in a manner perhaps consistent with the predictions of memetic evolution.

Exactly the same logic applies to the milk-bottle-top opening birds. They are not learning to peck any more than the tennis apprentice is learning to run around or hold rackets: that motor pattern is already part of their repertoire. They are learning to peck a particular object (the milk-bottle), found in a particular location (on a doorstep), to generate a particular consequence (the cream reward). Similarly, Japanese macaques are not learning to move their hands in water, they are learning that if they move particular objects (the sand-covered sweet potatoes) in water they can generate a desirable reward (that is, sand-free food). Imitation is not a criterion upon which the meme-carrying of animals and humans can be distinguished.

Virtually all memes, including those of humans, involve an element of reconstruction. Humans when they imitate rarely do so perfectly, and they are typically forced to re-evaluate and adjust their behaviour in the light of sensory feedback. To argue that largely reconstructed memes are not memes would require an arbitrary and unenforceable rule to be employed regarding just how much reconstruction is allowed before acquired information qualifies as a meme. Reconstruction cannot be quantified in any meaningful sense. Second, reconstructed memes fit the Darwinian model as effectively as perfectly transmitted memes. They too can replicate and evolve, and to eliminate them on arbitrary grounds at this early stage in the science of memetics risks eliminating a large number, maybe even the majority, of interesting cases of social transmission that may benefit from memetic analysis. Dawkins’ credence in The Selfish Gene is not how transmission occurs, but whether the product is similar in the transmitter and receiver - in other words, what counts (amongst other things) is fidelity.

Although animals in general are frequently regarded as not having memes, researchers commonly make an exception of birdsong. However, learning a song does not involve learning a novel motor pattern, and would appear on the surface to be inconsistent with the definition of memes. Yet perhaps we are being pedantic, since the acquisition of birdsong involves the social learning of novel behavioural elements, if vocalisations can be regarded as such. Moreover, no doubt, most birdsong meme enthusiasts regard song learning as a form of imitation. Yet social learning theorists have long made a distinction between vocal and motor imitation. The former is regarded as a less challenging form of social learning, since there is a greater correspondence between the sensory feedback from the learner’s own vocalisations and those of its tutors than in motor imitation, for which the sensory experiences of doing and seeing others do are typically very different. What is more, birdsong is a highly restricted form of social learning, different from the general capacity for social learning found in humans. The processes underlying song acquisition allow birds to learn song and nothing else. That is not to say that songbirds are incapable of other forms of social learning, but rather that these other forms probably rely on alternative mechanisms to song learning. Whatever the processes underlying birdsong, there is no evidence that they are more similar to the processes underlying human culture than other forms of animal social learning. The proposed memes in our examples show the three characteristic qualities of replicators detailed by Dawkins: copying-fidelity, fecundity, and longevity. As such, these proposed memes seem as likely as any human meme to undergo evolutionary processes through heredity, variation, and selection. Animal social learning may be a useful testing ground for the meme concept. After all, it is entirely plausible that in future years animal social learning may eventually be judged to fit the meme model better than human culture.

This leads to the argument that truly learned behaviour, as opposed to imitative behaviour, requires an underlying cognitive act. But, since the ability of an animal to abstract is not necessarily reflected in real behaviour, Chomsky maintains that the investigation of language must also take into account the mental processes that underlie psychology. Cognitive psychologists used this basis to argue that cognitive architecture is modular; that cognition is achieved by a system of discrete components. Each part of a language is thought to be processed by different regions of the brain; for example semantic (meaning), lexical (dictionary of words), syntactic (structure), morphological (context and inflection) and phonology (sound). The reductionist view, that the mind is a seamless all-purpose computational device is disputed by others who say that the brain is a collection of expert linguistic
individuals, each with specialised knowledge and expertise. If one leaves, the group tries to compensate. If too many leave (e.g. a stroke), it ceases to function completely.

Antonio Damasio is perhaps the most outspoken proponent for scientists sticking with the theory of language as being a function of three discrete brain regions. He posits that these three regions in both hemispheres represent internally a picture of ‘anything that a person does, perceives, thinks or feels while acting in the world.’ And if the verdict is out as to the exact mechanism which is responsible for human language, let us remember that we are still struggling with the neurophysiology of nematodes. As Chomsky vividly portrays;

‘One of the best studied cases is the nematode, little worms with a three-day maturation period, with a wiring diagram that is completely analysed. It is only very recently that some understanding has been gained of the neural basis of their behaviour, and even that remains limited and controversial.’

And if understanding human language is hard enough, we have only begun to study the effects of language’s evolution on group dynamics and social change. What we do at least know about humans is that the ‘social status’ of any of our languages is the most accurate way of predicting whether it will survive. Languages that are more frequently used have a greater chance of being used in future generations, even in societies that normally only use that language as a secondary one.

Society as a whole is based on communication, yet ironically, no greater time has there been than in this century where the internet and television has shrunk the world into a ‘global village’ with one voice, yet has devalued the importance of communication. Talk is cheap when it is without love, respect and commitment to fulfil the words we speak. We talk of ‘honour’ - to give one’s word and keep it - yet how many of us live honourably?

**Body Language**

*‘Although joy is the cause of our smile, sometimes our smile is the source of our joy.’*

Thich Nhat Hahn

The words we speak do not necessarily correlate with what our body ‘says’ through its movements. Clinical studies have revealed the extent to which body language can actually contradict verbal communication. A classic example is the young woman who tells you how much she loves her boyfriend while nodding her head from side to side in subconscious denial. Body language can include any non-reflexive or reflexive movement of the body, or all the body, used be a person to communicate an emotional message to the outside world. Body language varies amongst cultures and environments, and obviously between species. For every situation, there are two elements to body language; the delivery of the message and the reception of the message. Rarely are body language signals sent consciously. We usually act out our emotional state with non-verbal cues which are often interpreted subconsciously by others. Our body might say ‘Help me, I’m lonely. Leave me alone, I’m depressed.’ We lift an eyebrow for disbelief. We rub our nose for puzzlement. We cross our arms to protect ourselves. We shrug our shoulders for indifference, wink an eye for intimacy, back away if someone impinges on our personal space, tap our fingers for impatience, slap our forehead for forgetfulness, etc. In animals, similar messages are conveyed. Witness the submissive roll-over of a defeated dog in a fight, or certain species of birds fighting for territory will settle their differences by furious nest building. Antelope may lock horns and struggle for superiority, but will end in a ritual defeat without much blood loss. Animals have learnt the art of acting out relationships through body language which reduces energy, stress and blood loss. What is controversial about body language in animals is whether these behaviours are instinctual, learned as imprints at youth or inherited genetically.

**Symbolling**

Humans have a unique capacity to assign to things and events certain meanings that the senses alone cannot comprehend. This consistent ability, called ‘symbolling’, has been proposed by many experts to be a more suitable explanation as to how humans differ from other animals. Language is a good example of this ability. In speech, the meaning of the words we utter is not entirely inherent in the sounds themselves. Humans assign meaning to those sounds freely and arbitrarily. This is the essence
of symbolling. How did humans come to develop the ability to symbol? Oddly enough, it all began with posture.

Erect posture freed the arms and hands of our ancestors from its earlier function of locomotion. This made possible an extensive and versatile use of tools and the eye-hand-object coordination involved in using tools stimulated the growth of the brain, especially the forebrain. This enlargement and specialisation of the brain allowed for refined control of the lips and tongue, which allowed for the development of speech. And speech, as mentioned earlier, is one of best examples of symbolling. The introduction of symbolling into primate social life was nothing short of revolutionary. It changed everything. The world of nature became alive and acquired new meaning. The ability to symbol added a new dimension to primate existence. Tools became symbols of authority, mating became marriage and social relationships became moral obligations. Humans had at last arrived.

Facial language

The face we present to the outside world is rarely the real reflection of our inner emotional state. For example, how hard is it to smile? Latest research indicates that it may not be as easy as we think. Smiling on demand is easier said than done. Some of us break into a radiant smile of authentic good cheer, while the rest of us pose politely. There are two kinds of smiles. The first, called a Duchenne smile (after its discoverer, Guillaume Duchenne), is genuine. The corners of your mouth turn up and the skin around the corners of your eyes crinkles (like crow’s feet). The muscles that do this, the orbicularis oculi and the zygomaticus, are exceedingly difficult to control voluntarily. The other smile, called the Pan American smile (after the flight attendants in television ads for the now-defunct airline), is unauthentic, a mask, with none of the Duchenne features. Indeed, it is probably more related to the rictus that lower primates display when frightened than it is to happiness. With advancing age, the masks we use often become more difficult to sustain.

However, faking a genuine smile (one which evokes the Duchenne musculature response) precipitates the inner glow associated with the facial expressions. This apparent contradiction, that sometimes we can evoke feelings of joy just by smiling genuinely is not so much a new idea, but one that is being utilised in psychotherapy. Knowing that longevity is directly related to the degree of inner happiness (and thus the outward appearances of genuine happiness) has led many health workers to reconsider the maxim that a happy person is a long-lived person.

Personal space

Often the swiftest and most obvious type of body language is touch. The touch of a hand, or an arm around someone’s shoulder, can spell a more vivid and direct message than dozens of words. But such a touch must come at the right moment and in the right context. Another vital body language is personal space. What determines our body space is what labels we attach to objects in our surroundings. For example, highly judgemental people have more fragile personal spaces, and are easily upset by strangers compared with more accepting individuals. Treating someone as a non-person, for example being crushed in a crowded subway, allows us to accept someone standing within our personal space. When a cleaner comes into an office, most people label them as ‘the cleaner’, thus denoting them as a non-person and they then allow that person to fuss about them with a vacuum cleaner without feeling their personal space invaded. Thus labelling (or judging) works for most people and allows them to function in what could be a threatening situation. In a reverse situation, being treated as a non-person in a non-threatening situation can evoke resentment. Thus, non-labelling of people in most situations can allow for more relaxed and broadened personal space that is less often in conflict.

Developing vet/client relationships

‘If the mind is to survive this constant battle with the unexpected, two qualities are indispensable: first, an intellect that even in this moment of intense darkness retains some trace of the inner light that will lead to truth, and second, the courage to go where that faint light leads.’

Carl von Clausewitz

Without doubt, there is nothing more important and yet more difficult than developing and
maintaining relationships with clients. A person with excellent PR skills has that ‘x’ factor that allows
them to instantly bond with a person in a meaningful and lasting way. Whatever this ‘x’ factor is, it
appears to be more than just words. Communicating is not just talking. The biggest part of
communication involves listening. As easy as this sounds, listening is quite difficult because it involves
genuine listening, giving unconditional positive regard to others and communicating empathic
understanding of other’s experiences. Therefore, being truthful, kind and compassionate are essential
points to remember if effective communication is your goal. However, many successful communicators
are not truthful, kind or compassionate. How these communicators get across their message is more
dependent on evocative methods such as aggression and appealing to basic emotions or ideals
(especially racial, political, religious discord, etc). Although this method is equally successful it lacks
what Goleman describes as resonance (emotional honesty), resulting in the end in racial, political, and
religious dissonance. In addition, it is not only individuals that use this short-cut method of
interpersonal manipulation. Economic forces have forced many companies to adopt aggressive
marketing, base emotive-appeals and deceptive data to stimulate profit and create loyalty in their
clientele. The lack of information to patients can hasten uncertainty, anxiety and stress, which might aggravate
their health condition further. Patients not only lack access to this information, but it puts doctors in a
higher and more privileged position of power. Being overly professional to clients is still a problem in
human medicine. Patients being treated as a commodity occurs when doctors; (a) give useless
treatments to keep the patient under medical care; (b) demean and undermine efforts at self-
determination and self-care; and (c) keep the patient’s life suspended by continual reminders that death
is just around the corner, and that all time and energy left must be devoted to ferreting out and killing
the disease. Controlling the flow of information to the patient also regulates professional power in human medicine. Controlling
the flow of information is not an intentional conspiracy by doctors against the patient; rather, it has
evolved as a product of the structural limitations inherent in the profession (on a ‘need to know’ basis).
The lack of information to patients can hasten uncertainty, anxiety and stress, which might aggravate
their health condition further. Patients not only lack access to this information, but it puts doctors in a
higher and more privileged position of power. Being overly professional to clients is still a problem in
human medicine. Patients being treated as a commodity occurs when doctors; (a) give useless
treatments to keep the patient under medical care; (b) demean and undermine efforts at self-
determination and self-care; and (c) keep the patient’s life suspended by continual reminders that death
is just around the corner, and that all time and energy left must be devoted to ferreting out and killing
the disease.

In human medicine, interpersonal relationships are a place where communication is
problematic. Maintaining a physical and emotional distance with patients is thought to maximise
treatment and minimise compassion fatigue, but the untoward effect of this is dehumanising the
patient. The ideology of ‘professionalism’ in human medicine produces a social distance between
doctor and patient. Professionalism is based on an incumbent belief that the doctor is the expert and
the patient is ignorant. Additionally, medical practitioners are separated from their patients by gender,
ethnicity and socio-economic background. These factors directly contribute to widening the social
distance between them. In addition, power differences between the doctor and the patient often works
against patients. In a professional position, power serves to establish professional autonomy, which in
turn saves physicians from potentially damaging problems such as therapeutic failure. Controlling the
flow of information to the patient also regulates professional power in human medicine. Controlling
the flow of information is not an intentional conspiracy by doctors against the patient; rather, it has
evolved as a product of the structural limitations inherent in the profession (on a ‘need to know’ basis).
The lack of information to patients can hasten uncertainty, anxiety and stress, which might aggravate
their health condition further. Patients not only lack access to this information, but it puts doctors in a
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the disease.

Other areas where communication affects the doctor-patient relationship is in the control of
time and quality of consultation, understanding the need and number of diagnostic tests. The attitude
of doctors and allied health workers also directly affect the interpersonal relationship between with
patients. Social status also plays a role. For example, minority groups are more likely to distrust
medical professionals. A patient’s ethnic background influences clinicians’ perceptions. Negative
stereotypes about black patients, or those perceived with lower intelligence or are substance abusers are common. These stereotypes may exist unconsciously in physicians who are otherwise deeply opposed
to discrimination, thereby subtly affecting their behaviour. Clinicians thus need to develop cultural
sensitivity and cultural competence skills by being aware of patients’ values, beliefs and world views;
acknowledge that differences exist; and respect these differences.

Clinicians also need to be aware of values, perspectives and biases that are derived from their
own culture of origin and from the biomedical world view of their professional training. Human and
veterinary medicine have a cultural system with their own specific language, values and practices that
need to be translated, interpreted and negotiated with clients. For example, our inability to save an
animal’s life might be construed by clients as incompetence. By addressing the issue of imminent
patient death in a compassionate way, affirming that there is a point where treatment can no longer
improve quality of life strengthens the vet-client relationship. Listening to the client’s wishes evokes the
feeling that we primarily care about their pet’s well being. In any relationship, whether it is a
professional one or not, there is one vital gauge to predict its longevity - conflict. It is not the
presence of conflict but the way we handle it that predicts the survival of a relationship. Importantly,
compatibility is not the key, dealing with incompatibility is.
There are a number of essential contributors to relationship breakdown.

- Escalation - a process of one-up-manship. Each retort in a fight ups the ante so that the conditions get worse with each round. People in successful relationships are able to nip escalation in the bud. Escalation is equivalent to relationship terrorism. The majority of veterinary surgeons fronting veterinary surgeons’ boards is due to either or both sides of the argument unwilling to resolve the situation. Any person can err, but it takes a greater person to admit error.
- Invalidation - put-downs, either subtle or direct in nature. Invalidation is an attack on the character of another, and it is never healthy. A subtle form of invalidation is holding back on due and expected praise. Injecting criticism where praise is due worsens it.
- Withdrawal - physical (leaving the room) or less obvious (getting quiet or shutting down.) Avoidance has the same goal but the emphasis is on preventing the discussion from ever happening in the first place. Having a nurse tell a client that the vet is in surgery certainly avoids a conflict if the vet doesn’t want to talk with the client, but this only leads to escalating emotions for both parties.
- Negative interpretations - a negative interpretation is when one person (or both) consistently holds to the belief that the motives of the other are more negative than is truly the case. Positive outlooks are a means of battling negative interpretations. ‘The client is always right’ is an adage that certainly satisfies the client, but quite often leads to resentment by the vet/nurse. Always seek a win-win solution wherever possible. Blame should never be apportioned. In most situations, the finger-pointer is usually the culprit.

Since conflict is so pivotal to relationships, methods of dealing with these conflicts are as numerous as there are individuals who face them. Broadly speaking, there are a number of well-characterised methods of conflict resolution available, including identifying the cause of the conflict, seeking support, employing coping mechanisms (positive and constructive thinking patterns), taking positive actions to resolve the crisis, and learning from the experience. This is discussed in more detail later.

Conflict resolution

‘Most quarrels amplify a misunderstanding.’
   -- André Gide

What is one of the biggest causes of stress in the workplace? Ask anyone who works with other people. Whether the number of people in the workplace is large or small, ‘conflict’ is likely to be part of their answer. Disputes and conflict are an inevitable part of life. At its best, conflict leads to a search for solutions and results in positive change. At worst, the resulting upset and anger exhibits as ‘workplace rage.’

While some believe that learning to deal with these daily challenges is something that can wait until adulthood, it is actually on the playground, as pre-schoolers, where dispute resolution skills are first developed. At a very early age, most pre-schoolers learn the valuable lesson that selecting the appropriate dispute resolution process is often the single most important factor in the successful resolution of a dispute. Yet not all skills learn at kindergarten are necessarily applicable in the consultation room. Throwing a tantrum, or running away from an argument are not conducive to professionalism. Some of us need to relearn those questionable traits we picked up in the sandpit or drop them altogether.

Many times, often with the best of intentions, people at work decide it’s more productive to remain silent about their differences than to air them. There’s no time, they think, or no point in going against what the boss says. But research shows that silence doesn’t smooth things over or make people more productive. It merely pushes differences beneath the surface and can set in motion powerfully destructive forces. When people stay silent about important disagreements, they can begin to fill with anxiety, anger, and resentment. As long as the conflict is unresolved, their repressed feelings remain potent, making them increasingly distrustful, self-protective, and all the more fearful that if they speak up they will be embarrassed or rejected. Their sense of insecurity grows, leading to further acts of silence, more defensiveness, and more distrust, thereby setting into motion a destructive ‘spiral of silence.’ Sooner or later, they mentally opt out, sometimes merely doing what they’re told but contributing nothing of their own, sometimes spreading discontent and frustration throughout the
workplace that can lead them, and others, to leave without thinking it through. These vicious spirals of silence can be replaced with virtuous spirals of communication, but that requires employees to find the courage to act differently and employers to create the conditions in which people will value the expression of differences. All too often, behind failed products, broken processes, and mistaken career decisions are people who chose to hold their tongues. Breaking the silence on conflict can bring an outpouring of fresh ideas from all levels of an organisation; ideas that might just raise the organisation’s performance to a whole new level.

Methods for resolving conflict fall along a continuum of avoidance, negotiation, mediation, arbitration, litigation and self-help.

- **Avoidance** - Avoidance is a strategic decision to deliberately walk away from the dispute, physically, mentally or emotionally. Often, this method operates by the relative power imbalance of the parties, i.e. whether we are right or wrong, likely to win or lose, etc. Based on predicting outcome that we will probably lose, this does not mean we are capitulating. It is a strategic decision that, regardless of the validity of the claim, the individual will be more successful by not making any claim. This is good business sense when the cost of litigation outweighs any potential benefit from engaging in the dispute. In mathematical terms, this is an effective method of one-on-one conflict resolution. Avoidance is based on ‘game theory’ mathematics which stipulates that strict non-cooperation (‘I win, you lose’ strategies) is first employed. If an unsatisfactory outcome is likely (e.g. defeat, collision, war, etc), cooperative manoeuvres (‘let’s talk’) are then employed.

- **Negotiation** - Negotiation consists of voluntary, direct, one-on-one contact between the parties in dispute. Critical to any negotiation is the willingness of the parties to communicate about their dispute and the willingness to compromise towards a win-win solution for both parties. Since there are few, if any, limitations to a negotiation, this allows for a wide range of possible solutions. Not surprisingly, negotiation is the primary resolution device used by most professionals. The Arab race have a saying that ‘nobody can carry blood. It is too heavy. Even earth cannot absorb it. It will remain a stain.’ They see conflict as leaving a ‘stain’ on the tribal community, and directly mediate in resolutions to avoid staining the image of the community. In the veterinary profession such a community also exists - the veterinary ‘tribe’ or profession. It therefore stands to reason that any conflict involving a veterinarian must necessary reverberate throughout the professional community, leaving a stain on the minds of individual practitioners. Negotiation requires the vet and client to work together by: (i) identifying and agreeing on what issues are in dispute; (ii) recognising that the interests, goals and needs of the parties are not completely incompatible; (iii) realizing that the parties can influence each other to act in ways which are mutually beneficial; and (iv) rejecting other, more confrontational and adversarial ways of resolving the dispute.

- **Mediation** - Mediation is usually facilitated by a third party (e.g. the veterinary manager, who intervenes when a client ‘wants to see the boss’) who helps the parties to resolve their dispute. The mediator does not normally make decisions. Rather, the mediator hears both sides of the dispute and helps the parties to arrive at their own solution. Mediation is an opportunity for the parties to maintain some control of their dispute – control of the costs (financial, physical or emotional), control of the process and control of the outcome. However, in order to be successful, the parties must be open, honest and candid with the mediator. Each party to the mediation must do its best to present a fair and honest view of its side of the dispute; and each party must be willing to compromise.

- **Arbitration** - Arbitration is useful where the parties not only seek the intervention of a third party, but grant the third party decision making power. Arbitration usually involves the veterinary surgeon’s board and can be an informal or formal legal proceeding. By submitting their dispute to an arbitrator as opposed to going the more formal litigation route the parties hope to achieve a speedier and more cost effective resolution. In conflicts in the arenas of national/international politics, mediation and arbitration are often joined under the umbrella of Alternative Dispute Resolution (ADR) and has been adopted by many countries as a compulsory method of negotiating.

- **Litigation** - While litigation remains a legitimate and necessary dispute resolution method, the costs of litigation (financial, physical, emotional, etc.) remain a certainty. If veterinary litigation reaches levels comparable to human medicine, insurance levies and indemnity costs will spiral, bringing with it additional costs the veterinarian will necessarily have to pass onto the client. Consequently, the
client will pay higher fees for veterinary services and with it, a higher incidence of clients opting for euthanasia of their pet rather than pursuing medical/surgical intervention. Veterinarians have long been able to minimise the costs of professional liability as the law has seen animals as little more than property. Lately, this is changing as numerous jurisdictions have changed the legal status of pet owners to ‘guardians.’ Emotional damages have been awarded for negligence to pet animals. Despite our profession’s support of the human-animal bond there has been a collective outcry over the spectre of animals having ‘emotional value.’ In a recent survey of American veterinarians, a number of concerns were associated with changing laws regarding legal obligations in veterinary practice. These include rising liability expenses, anticipated costs for practicing defensive medicine, financial repercussions if the vet is found liable for their actions, the need for improved medical records and client consent strategies, and the potential need to refer more cases to specialists. The added burden of emotional strain when undertaking litigation must also be considered. Perhaps Abraham Lincoln said it best when he remarked to fellow lawyers that: ‘We should discourage litigation. Persuade your neighbours to compromise whenever you can. Point out to them how the nominal winner is often a real loser in fee, expenses and time loss. As a peacemaker, the lawyer has a superior opportunity of being a good person. There will still be business enough.’

- **Self-Help** - The most extreme form of dispute resolution is self-help, which generally involves unilateral action by one of the parties. There is generally no communication between the parties, no intervention by any third party and most importantly, no rules. An individual person makes a strategic and conscious decision to resolve the dispute themself rather than avoid it, engage in negotiation, or seek the intervention of a third party mediator or arbitrator. People frequently resort to self-help which can even take the form of illegal conduct (e.g. the driver who commits an act of road rage after being cut-off, an angry neighbour who cuts down a 100 year-old tree). These acts of self-help are rarely an acceptable means to resolve a dispute.

As one travels along this continuum, the dispute becomes more adversarial, the costs (monetary, physical or emotional) become greater, options become more limited and the parties increasingly lose the ability to control the outcome. Valuable lessons can be learned about how to successfully resolve disputes by selecting the right resolution process. Our greatest opportunity as a profession mirrors what is being experienced in medical litigation. If we don’t tap into our exalted human interests for collaboration and compromise rather than our more base urges of competition and rivalry, clients will become more distrustful of our profession as they are becoming with medical practitioners. Consequently, conflict and litigation will be even more common and our client’s trust, the currency of our economic success, will remain uncertain.
Compassion

Ability to provide professional non-discriminatory care, regardless of species
Ability to recognise the interrelatedness of care giving as a ‘win-win’ situation

‘Experience shows us that love does not consist in gazing at each other but in looking together in the same direction’
Antoine de Saint-Exupéry

Definitions:

Altruism - the ability to alleviate the suffering of others.
Empathy - the ability to enter into another’s feelings.
Compassion - the feeling of distress for the suffering of another, often including a desire to alleviate it.

As far as western science has been able to determine, compassion is an uniquely human attribute. Our ability to reach out to another’s problem allows us to share the burden of their difficulties. Since we identify feelings through language, it is unknown whether animals are able to exhibit compassion. Certainly there is abundant evidence attesting their abilities to show altruism, but the emotional content behind this action is still unclear. What we do know is that human displays of compassion are uniquely more complex than altruistic displays of animals and are a result of emotions as well as actions. Simply put:

\[
\text{Compassion} = \text{Empathy (emotion)} + \text{Altruism (action)}
\]

A fundamental problem in founding an evolutionary ethics is to explain how altruism can emerge during evolution. ‘Weak’ altruism can be defined as behaviour that benefits more to another individual than to the individual carrying out the behaviour. ‘Strong’ altruism denotes behaviour that benefits others but at one’s own cost. Both are common and necessary in highly cooperative (ultrasocial) systems. Ultrasociality refers to a collective organisation with full division of labour, including individuals who gather no food but are fed by others, or who are prepared to sacrifice themselves for the defence of others. In the animal world, ultrasocial systems are found only in the social insects (ants, bees, termites), in naked mole rats and in human society. Evolution seems to predispose individuals to selfishness. Indeed, natural selection promotes the ‘fittest’ individuals, i.e. the ones that maximally replicate. Individuals need resources to survive and reproduce. Finite resources imply competition among individuals. Altruism (helping another individual to increase fitness) tends to diminish the fitness of the altruist, since more resources will be used by the helped one and less will be left for the helper. Thus, without further organization, altruism tends to be eliminated by natural selection.

In 1964, Hamilton formalised the idea of kin selection to explain the evolution of altruistic behaviours. Since then, numerous studies have shown that seemingly altruistic actions towards close relatives are a common phenomenon. Many species, not just mammals, use kin recognition to direct altruistic behaviours preferentially towards relatives. The motivations behind this important aspect of animal social biology are poorly understood, but likely to be an evolutionary design for survival. In humans, a person’s suffering (the instigator of altruistic behaviour by another) is an individual phenomenon. Scientists are sceptical that we should see suffering as an interpersonal, even communal, phenomenon. For example, the medical profession argue that altruism interferes with a doctor’s capacity to effectively accomplish their tasks without becoming embroiled in the patient’s emotions. Such a professional rationale stems from nineteenth-century positivism which encouraged the belief that the best health care is one that is efficient and unceremonious. Be aware of other’s suffering, but
keep an emotional distance.

Empathy (feeling other’s emotions, but not acting on them) is a powerful means of tacit communication, an essential ingredient in any therapeutic relationship as well as in psychotherapy. Empathy has emerged as an evolutionary adaptation. Developing cooperation skills to solve problems enhances survival, especially with individuals living in large groups. The capacity to express emotions, and to read and understand emotions of others enhances communication with others and improves individual survival. This concept was popularised in the movie *A Beautiful Mind*, where Nobel-laureate winning mathematician John Nash showed how cooperation allows for greater individual success. Though empathy is the cornerstone of clinical psychology (ego-psychology), general medical practitioners consider it scientifically ungrounded. Despite this, empathetic therapists are more effective than less empathetic therapists. Some facts about compassion:

- Compassion has primary, secondary and tertiary values
- Compassion is temporal and regional
- Compassion devoid of emotion is self-destructive

The primary value or benefit of compassion is its immediate value for the giver, i.e. self-compassion. When one gives love, it is given first to oneself then as an outward expression. As we shall see later, it is difficult, if not impossible, to feel compassion for others or animals without feeling the feeling the same for oneself. Such an imbalance is counterproductive and increases the risks of emotional and physical disease to the giver. The flow-on effect of primary compassion is directing it to sick patient, resulting in the secondary effect of alleviating their suffering. The tertiary effect of compassion is the alleviation of anxiety of those emotionally-bonded to the patient. As we shall also see, the benefits of compassion are in direct contrast to the benefits of altruism, which may assist a patient in the short term doesn’t necessarily benefit the giver or patients in the long term (see later section on compassion fatigue).

However, for all its benevolent applications, compassion can be a double-edged sword. It is one thing for a vet to recognise an animal is pain, another for them to diagnose and treat the problem without aggravating the disease or becoming emotionally over-involved with the outcome. Having the right emotional drive and coming from the right place and choosing the right time and place for compassionate acts takes experience. Compassion is always a difficult thing to talk about with professionals. Most vets affirm that they are compassionate. When one explores whether we are truly compassionate or merely doing what we are expected to do, what emerges is a question of emotional motivation. ‘Selective compassion,’ where hidden agendas abound, affects how we feel and act. We might be acting altruistically to alleviate an animal’s suffering, but our motivation may be to appease a disgruntled boss, or to make enough money to pay for family expenses. Selective compassion is in reality just another name for altruism, devoid of emotion and eventually self-destructive. Some of us also have questionable attitudes toward certain species over another. Where our motivation for compassion is reward (money, praise, etc) our actions result in emotional dissonance or disharmony. Improperly motivated compassion becomes blocked, stifled or diminished. In the long term, we tend to lose our compassion sensitivity altogether. Altruism can be operational at all times and places, but because of its physicality, necessitates a reduction in fitness of both giver and recipient. It must be distinguished from compassion which operates only at times and places of emotional engagement and thus is beneficial to giver and recipient.

The failure of compassion occurs when we fail to bring our whole selves to a task. Letting go of what you think about the client or the patient receiving help can be the first step to a creative compassion. Many of the logical tools we use in managing clinical cases can actually remove us from the experience and make it harder to respond at an emotional level. Reacting to an emotional client closes down our options. Responding to them opens up possibilities and nurtures trust. This is a form of compassion which can satisfy clinical and business imperatives.

Compassion often surrounds the act of giving, but the act of giving need not necessarily involve or imply any specific feelings. Maimonides, a Jewish philosopher of the medieval period, said there were various levels of charity or compassion.

1. To give reluctantly
2. To give cheerfully but not in proportion to the distress of those in need
3. To give cheerfully and proportionately, but only when asked
4. To give cheerfully, proportionately and without being asked
5. To give so one doesn’t know the receiver but they know him
6. To give so one knows the receiver but they do not know him
7. To give so no one knows who has given or who has received
8. Assisting before their need of assistance has arisen.

Giving blood, for example, is considered one of the highest charities on Maimonide’s ‘Golden Ladder of Charity. Aristotle suggested that we become virtuous by practising virtue (ethos is the Greek word for habit), in much the same way as we practise anything else to become good at it. Compassion, like virtue, is not something which comes naturally but is in fact acquired through effort, mirroring others and self-examination.

The anatomy of compassion

The compassion we feel for others, whether people or animals is of three basic types; compassion for physical suffering, mental suffering or spiritual suffering. Compassion is thought to arise from the mind. In particular, the left middle frontal gyrus of the cerebrum has been pinpointed as a locus for all positive emotions, including compassion. Increased activity in the left prefrontal cortex induces feelings of happiness, enthusiasm, joy, high energy and alertness. On the other hand, it has been shown that increased activity in the parallel side (right prefrontal cortex) correlates with distressing emotions, such as sadness, anxiety and worry. Indeed, extreme rightward tilt of electrical activity in the right prefrontal site increases the likelihood that a person will succumb to clinical depression or an anxiety disorder at some point in the life. The good news about these results is that electrical activity shifts can be regulated by conscious recollections of positive emotions (such as recalling a good memory of something from the past). Not only that, but new paradigms about ‘plasticity’ of the cerebral cortex suggest a high likelihood that generating positive emotional states over prolonged periods leads to ‘rewiring’ of emotional centres. This rewiring appears to have a lasting effect beyond the generation period.

Compassion fatigue

Compassion fatigue is a phenomenon of all health workers including veterinarians, veterinary nurses and animal handlers. Veterinarians who deal with difficult emotional situations associated with their work confuse the emotional drain associated with work (‘burn-out’) to a loss of an ability to continue caring. Yet, with compassion fatigue it is not a person’s ability to care that is the problem, but their ability to respond. There thus has to be a middle ground between caring for all and responding to none or caring for all and responding to all. Both extremes are detrimental to satisfactory health delivery.

Compassion fatigue and burnout differ dramatically in motive. Compassion fatigue originates from compassion needs (‘I want to help because I feel their suffering’) whereas burnout originates from altruistic needs (‘I have to help because I am told to do so’). In other words, compassion fatigue results from caring for others to the point of exhaustion whereas burnout results from helping others to the point of exhaustion; a subtle yet important distinction because compassion fatigue is far less common than burnout. The reason behind this is that motivation behind actions predicts the action’s longevity. Having to do something is far less potent than wanting to do something.

Compassion fatigue as a clinical disorder is a state of tension and preoccupation with the patient, manifested in one or more ways including re-experiencing the traumatic event, avoidance/numbing of reminders of the event, and persistent arousal. The practitioner absorbs the trauma/emotions from the patient or client. Medical studies have shown that a history of previous stressful life events and interpersonal violence in veterinarians is also a potential risk factor for compassion fatigue and burnout. Importantly, oncology practitioners with a cure-orientated approach are more prone to compassion fatigue than those with a palliative approach. The personal and economic costs for ‘helpaholics’ include poor workplace morale, personal relationship difficulties, drug-use, personality aberrations and decline in general health.

Obviously, it is the nascent ‘calling’ to help animals and tend to their welfare that brings people to study veterinary science in the first place. But what lies behind this so called ‘calling?’ In an interesting study done with parish priests, if the origins of the priest’s calling was to fulfil some unrequited need for wealth, fame, respect, etc, then a greater degree of conflict arose within them at a later date. Becoming a veterinarian to get an animal/person’s love, or wanting to heal others while
Ignoring one's own wounds, or trying to carve a personal identity out of one's work is unsound. Misdirected compassion (directed at others instead of self) indicates inner wounds needing to be resolved. Such misdirected compassion leaves one more vulnerable to depression, a sense of failure, fatigue, personal dissatisfaction, compassion fatigue and burnout.  

Feelings of inadequate control over one's work, frustrated hopes, expectations, and the feeling of losing meaning, are also causes of burnout. It is not synonymous with clinical depression. Empirical research suggests that burnout and depression are separate entities, although they may share several 'qualitative' characteristics, especially in the more severe forms of burnout. Burnout is more common than compassion fatigue and may affect every aspect of an individual's life, have a deleterious effect on interpersonal and family relationships and lead to a negative attitude towards life in general.

**Practising compassion**

Thomas Aquinas was one of many to consider the topic of compassion. He believed that helping others was an important aspect of not only bettering ourselves emotionally, but of improving the lot of those around us. To not help those who can be helped is as immoral as to actively hinder another's welfare.

> ‘Now, according to the natural order instituted by divine providence, material goods are provided for the satisfaction of human needs. Therefore the division and appropriation of property, which proceeds from human law, must not hinder the satisfaction of man’s necessity from such goods. Equally, whatever a man has in superabundance is owed, of natural right, to the poor for their sustenance.’

But merely giving of food is a shallow interpretation of compassion. To give of our time is an equally valued commodity. Relationships, based on a currency of bonding over time, is perhaps the most valuable of all economic commodities. Studies of doctor-patients relationships in the medical field emphasise the importance of this professional bond as a necessary ingredient for patient survival. The emotional investment required to construct a caring doctor-patient relationship can be justified on humane grounds. Patients in an empathic relationship show greater freedom of activity. Furthermore, the experience of feeling cared about in a relationship reduces stress hormone production and shifts the neuroendocrine system toward homeostasis. Because the social engagement of emotions and physiological responses appear to be intimately connected, the process is termed sociophysiology. This process can influence the health of both parties in the doctor-patient relationship, and should not be ignored between veterinarians, clients and their patients, albeit on a more limited basis. The role of the guardian in the recovery of their ill patients may be an integral part of recovery.

> ‘You don’t need to care about the sick to cure them, but without care, you quickly get sick of the sight of them.’

In North America, medical physicians emerge from their medical training with a wide array of professional beliefs and values. Many are thoughtful and introspective. Many are devoted to patients' welfare. Some bring to their work a broad view of social responsibility. Nonetheless, medical education in North America is committed to traditional values of detachment, self-interest, and objectivity. New graduates respond to this conflict in various ways. Some re-conceptualise themselves primarily as technicians and narrow their professional identities to an ethic of competence, thus adopting the tacit values and discarding the explicit professionalism. Some graduates treat patients as objects of technical services (medical care). Others internalise their personal beliefs and develop professional virtue. The downside of this approach is a risk of becoming overly involved in patient welfare. Importantly, an approach of 'unmitigated communion' (focussing on others to the exclusion of the self), is usually found in persons with an inherent low self-esteem (a negative view of the self). These persons frequently turn to others for self-evaluation, and often are in psychological distress due to their over-involvement with others. However, this does not negate the benefits of empathy, since such altruistic people quite often have a perceived sense of unity or oneness with the patient, with emotional benefits far outweighing the difficulties associated with it. Factors that influence individual capacity to exhibit empathy are gender, belief system, teaching styles at university, individual communication skills, ethics, and relevant social issues. In human medicine, the settings of medicine have reverted from the
austerity of hospital settings to a culture embracing less formal settings (such as patient’s home) where empathy is more conducive.

It is a conundrum of all health professions, including veterinary science, that compassion is not an essential ingredient for treating the sick or for alleviating suffering. One can be disinterested in a patient and still provide altruistic treatment or care. A lucrative practice can be highly motivated by financial success yet still provide excellent health care. Though the result of health care may be questionable (i.e. profit by cure), the means are satisfactory (providing treatment). However, altruism falters in the end. Without genuine compassion (altruism and empathy), a health professional inevitably loses effectiveness, motivation and interest for their work. Eventually, the vet would tire of the work (change professions), or isolate himself from patients (in a managerial position), ultimately unable to deepen his/her professional fulfilment.

One aspect of self-realisation is to work on constructive intimate relationships in which another person adds to the richness of our existence and expands our horizons. The other person is not a substitute for our self-development nor someone who can make up for our developmental deficits (or if this is the case, at least one should become aware of it, since such a relationship is most likely not completely free of some contamination from the past). When we are in touch with our active, striving, self-realizing self, we have the freedom and choice to ‘love.’ Loving implies that we can accept the person for what and who they are, apart from our compulsive needs from them. Certain needs are real and if not met, the relationship is not gratifying. Sharing warmth, caring, affection, and mutual growth as individuals as well as a couple are aspects of a constructive relationship. Hopefully, we will also expand our horizons to include friendships (outside marriage), relationships between equals, whether of the same sex or not, which include intimacy, loyalty, sharing that is unconditional and unselfish. Though it has been said that friendship, in the true sense of the word, is the most singularly uncultivated capacity in most western social relations, when we do achieve it, it can add tremendously to our existence.

Maintaining compassion is not easy. As veterinarians, we foster compassion on a daily basis by providing treatment to our patients, regardless of how trivial the medical problem may be. It is given to all creatures great and small. We deal with a myriad of medical and surgical problems, despite the trivial ones seeming to outweigh the more important ones. However unconditional compassion implies no distinction between what are perceived as ‘important’ diseases compared with less important ones. It questions whether a diaphragmatic hernia is more important than flea control. Numerically, more animals suffer the pain and debilitation of chronic flea allergies each year than the rarer problems. If we prioritize diseases and devalue one over the other, in doing so, we devalue the sufferer and our ability to evoke unconditionality. That is not to say that there are not relatively minor diseases but the way we look at a problem directly affects how we treat it. It is better then to treat all non-emergency problems equally. At hospital triage you may have to wait longer to have an ingrown toenail attended to but the law recognises no partiality to such priorities. Any doctor will tell you that dismissing a patient just because they have a headache can become a litigious exercise if they fail to fully examine the patient. What can be misconstrued as a trivial migraine can in fact underlie more serious and common problems such as intracranial hypertension.

It is better then to show unconditional compassion in all aspects of practise. To love the flea, the farmer, the fool, the drug rep, the errant vet who can’t quite get it right, the brilliant surgeon who humbles your talents, the bank manager who says ‘No’ to your overdraft extension or the opposition practise that undercut your prices. It is better to be compassionate with an angry client who berates you in front of your staff for no obvious reason. One day you too may be going through similar marital problems and have to call upon even ounce of patience to overcome your own shortcomings in compassion. Perhaps Kant clarifies the importance of clarity of emotions and an ethical life when he states:

‘Just as, by reflection on our perceptual and sensory experience, we become aware of the distinction between truth and falsehood, so it is by reflection on our experience of feeling and willing that we become aware of ethical distinctions.’
Confidence is a feeling of trust in a person or thing, or a belief in one’s own abilities. It is a measure of how well our perceptions equate with reality. When we see reality as it is, rather than how we think it is, there is no emotional obstruction to our mental activities. Ease of mind results in ease of action. Our mind is liberated from the circular patterns of discursive thoughts that hop from one idea to a next like fleas; annoying all but satisfying none.

We are all familiar with the feeling of confidence which results from the steady application of knowledge and experience. It isn’t something which arises out of thin air. Confidence results from knowing a particular subject in detail and being able to utilise that knowledge in a practical way involving conceptual, verbal and dexterous skills. Confident ultimately determines motivation. Confident people are usually highly motivated people and have strong ‘gut’ feelings which lead them forward in situations where outcomes are unknown.

Confident feelings are what motivate our every action. It expresses itself not only in physical action but a number of motivational drives including sexual desire, hunger, thirst, fear, power-dominance, the motivational aspect of overcoming or living with pain, the need for sleep, and nurturing. However, can we feel confident about things that we know nothing about? To be confident about the unknown appears to be anathema to the human condition. Yet, it is this fear of the unknown that has a direct affect on our levels of confidence. We might bravely tackle difficult surgery but how many of us confidently walk into a taxation office untrammelled by fears of an audit. To have self-confidence despite the unpredictability of external circumstances is often thought of as being foolhardy or naïve, yet confident people are often highly realistic in their expectations and though possessing fear, utilise it to heighten their achievements.

Confidence is another word for self-esteem. It is not the aggressiveness of high-flying executives. It is a confidence based on acceptance, of observing reality as something which interconnects all things, where no one thing is supreme over another. It is about a realistic sense of self worth, self-image and heightened self-awareness. This manifests as virtuous behaviours such as independence, integrity, honesty, justice, productiveness and pride.

Self-esteem, thus, can be considered the first essential component of genuine confidence. To have too low self-esteem leads to catharsis and self-destruction, whereas too high self-esteem results in aggression, arrogance and abuse of others. Social and personal experiences continually modify our sense of self, and self-esteem thus has a fluidic property. Not all experiences and people with whom we come into contact are equally relevant to the shaping of our self-esteem; only those that are especially important to us. Among the most significant people are the closest family members, peers and teachers.

Inherent in an understanding of self-esteem is that it has both positive (high) and negative (low) connotations. Thus, high levels of self-esteem manifest as a highly stable sense of self-worth, high self-awareness, and high self-image. People with high self-esteem normally are socially integrative, positive and agreeable. Low self-esteem implies a low and labile sense of worth normally associated with an isolationist, dualistic attitude (‘us versus them’) which is counter-productive to social and community integrity. People with low self-esteem also have a self-fulfilling low expectation of others. High self-esteem individuals, on the contrary, have greater social integration, high expectations of others and less risks of self-image damage.
Nelson Mandela, during his 1994 Inaugural Speech as president of South Africa, has this to say about self-confidence:

‘Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light, not our darkness that most frightens us. We ask ourselves, ‘who am I to be brilliant, gorgeous, talented, and fabulous?’ Actually, who are not to be? You are a child of God. Your playing small does not serve the world. There is nothing so enlightening about shrinking so that other people will not feel insecure around you. We are born to make manifest the glory of god that is within us. It is not in just some of us, it is in all of us. And as we let our own light shine, we unconsciously give other people permission to do the same. As we are liberated from our own fears, our presence automatically liberates others.’

Mandela’s experiences of twenty years in prison did not deter his confidence in his people or his nation. Such indestructible confidence is essential for success in life. Mandela is a clear example of how maintaining confidence in spite of difficult circumstances is essential not only for survival, but for sanity. Other famous writers/philosophers have attested to confidence being the source of their inner joy.

**Self-esteem**

Is what we think our own thoughts, or are they a function of social pressures? How much of what we do motivated by genuine needs to help others, and how much is social pressures to obey predetermined social mores. Being a healer of the sick and injured does not make a vet a greater person any more than a mechanic is ‘noble’ for fixing cars. The difference between a noble act and an ordinary act is the motivation or intention behind the actions. One can nobly fix a motorcar if the motivation is right. As the writer Henry Miller once said, ‘What seems nasty, painful, or evil, can become a source of beauty, joy and strength if faced with an open mind. Every moment is a golden one for him/her who has the vision to recognise it as such.’

The main problem with any professional pursuit is that it results in a ‘professional consciousness’ or a way of thinking that invariably makes us prone to developing tunnel vision; that is, our outlook is largely coloured by our career\(^{362}\). Victor R. Fuchs in the *Journal of the American Medical Association* noted that physician-patient and physician-physician relationships are ‘characterised by a market mentality similar to that found in the market for most commodities. Medical care can suffer from too much competition, just as it suffered in the past from too little\(^{363}\).’

In a capitalist consumer-based society low self-esteem is endemic especially in the lower socio-economic areas. We are taught to think that success makes us happy and that without social status we are failures. Some of the dreams which families, friends and society imprints on us have to be re-addressed. Do we need to get married, wealthy and or famous to have self-esteem? Is this society’s story or ours? Quite often, the dream is unattainable, or once realised, turns into a nightmare. Anger ensues, and if it is subsequently internalised, then leads to depression.

More and more evidence is accumulating that positive self-esteem is an antidote to depression. Such things as noting your successes and abilities and developing good morals, traits and actions can enhance self-esteem\(^{364}\). This is especially important for the depressed people who have a severe internal critic. It is important to challenge this inner critic. If a person grew up in a non-rewarding, inattentive family, he/she may feel like an underdog and have little self-respect. Such people frequently drift towards ‘a bad crowd’ and become antisocial because they gain some self-esteem in that way\(^{365}\). They will probably need more self-administered esteem building such as new social skills, educational and life plans and a different peer environment. It takes courage to leave friends, especially if they are our only support network.

Various factors influence individual self-esteem including peer acceptance, engaging in productive work, and a sense of self-worth\(^{366}\). Peer acceptance is dependent on the diameter of an individual’s social circle. That is, some people are happy with a small circle of friends and still feel fulfilled whereas others require more peer friendships to attain the same level of satisfaction. Productive work is a personal issue which depends on the person’s expectations for that work and the motivation behind it (i.e financial, socialising, career achievement, etc). Self-worth is a more nebulous parameter that is dependent on many factors such as self-needs, religious beliefs, socio-economic and family background, etc\(^{367}\).
Self-esteem begins in childhood and it might be worth looking at likely predictors and effectors that influence the emergence of self-esteem in adults. In a comprehensive study of North American schools during the early 1990s, one-fifth of all eighth graders were at high risk of school failure. Approximately thirty percent of the youths failed to complete high school, and homicide was the nation’s third leading cause of death for elementary and middle school children (2,555 juvenile homicides in 1990). An estimated 135,000 guns were brought into schools every day, and 82% of schools reported a significant increase in violence over the previous five years. The incidence of births to unmarried school teens had nearly doubled between 1965 and 1985. Teen suicide and anorexia nervosa rates doubled since 1968. Evidence supports the fact that most schools are not conducive to self-esteem since the level of self-esteem declines for most students the longer they are in school.

There has also been shown a direct relationship of self-esteem to school achievement. There is considerable empirical evidence that self-esteem predicts achievement in school from the primary grades through undergraduate education and that self-esteem is more likely the result than the cause of academic achievement. However, a certain level of self-esteem is required in order for a student to achieve academic success. Self-esteem and achievement go hand in hand. As the level of self-esteem increases so do achievement scores; and as self-esteem decreases so does achievement. Furthermore, and perhaps most important, self-esteem of children can be modified through direct instruction and that such instruction can lead to achievement gains.

The most important influence on self-esteem and thus academic success at school is a positive feeling about self. The most destructive influences include absenteeism, school retention, delinquent behaviour, teenage pregnancy, drug and alcohol abuse, anorexia/bulimia and suicide. Successful self-esteem programs at school directly affect self-concepts. Such programs serve as a ‘social vaccine’ in reducing the incidence of many such problems.

For veterinarians, self-esteem is thus essential to successfully managing a professional and personal life. Caring for patients involves empathic listening and awareness of the needs and feelings of the patient as well as our own; the acceptance of the fallibility of medicine and ourselves. Too often, we lead unbalanced lives in terms of work, relationships, play and personal time. We frequently strive for perfection, deny our needs and feelings, assume total responsibility for the patient, and are altruistic to the point of self-denial. Caring for patients without adequate self-care is frequently associated with subconscious needs for external validation. The hidden agenda may be harmful to the patient and the physician. Change requires self-awareness and recognition of the overt and covert benefits and risk of our current work patterns. Often there is a need to reexamine our life priorities, set limits at work, admit vulnerability, share our emotional lives, and appreciate the small things in our daily life that give us meaning and purpose.

Motivation

‘I’m slowly becoming a convert to the principle that you can’t motivate people to do things, you can only demotivate them. The primary job of the manager is not to empower but to remove obstacles.’

Scott Adams, author

A person’s performance is thought to be a function of their ability and motivation. Traditional theories of motivation stem back from Freud who was no lover of people and was far from optimistic. He assumed that people were lazy, that they hated work and avoided it, that they had no ambition, took no initiative and avoided taking responsibility. Freud believed that all people wanted was security and in order to get them to work they must be coerced, rewarded, intimidated and punished. This ‘carrot and stick’ philosophy was popular up until the 70s. In many companies, management which used this method policed their staff in a ‘big brother’ fashion, feeling their staff could not trust and who refused to cooperate. The long struggle between western capitalism against eastern Marxism created a legacy of businesses that up until the 90s struggled to maximise labour while reducing wages, and ultimately bankrupted staff morals and morale. Some theorists such as Boje suggest that we failed to consider the side-effects of motivation; the terror, death, desire, and addiction of work and consumption. Boje believed that when we measure our self-worth by our work, our sacrifice of family and self, our rewards are only appreciated in terms of an addiction to consumption as a substitute for a meaningful life. Consequently; that motivation leads to needs that are never fulfilled, to expectancies that are never enough, and to a self which is never quite actualised.

Thankfully, more modern theories based on McGregor and Maslow embrace a distinctly
humanist approach. Today’s philosophies reject the dark and dingy side of human motivation and place importance on finding emotional rather than material meaning in work. This philosophy epitomises Voltaire’s observation in Candide that ‘work banishes the three great evils – boredom, vice and poverty.’

Maslow’s hierarchy is so pervasive that it has almost become invisible, in that its basic framework and concepts are accepted without question. Managerial practices that permit or encourage employee autonomy and personal growth are justified on the grounds that such practices will enable employees to satisfy their esteem and self-actualisation needs. Some of the recent literature on employee empowerment, for example, suggests that only those employees who value higher order needs such as personal growth will respond positively to being given greater autonomy in their work.

Whichever way scientists to argue the case, motivation is best understood as being of two kinds; an intrinsic or inner drive for goal attainment which is more likely to be beneficial for the individual, while the other, extrinsic motivation, is ultimately negatory in providing any lasting any satisfaction:

- **Intrinsic motivation** – the desire to do something simply because one wants to. Pursuit of intrinsically motivated activities is linked to higher achievements scholastically and psychological adjustment to new circumstances and environments. Is longer lasting and more self-directing than external motivation. It is based on Maslow’s hierarchy of needs (as discussed previously).

- **Extrinsic motivation** – doing something merely to obtain rewards or avoid punishment from sources outside of oneself. Pursuit of extrinsically motivated tasks leads to decreased emotional involvement and negative feelings for circumstances and environments.

Motivation for behavioural changes requires an emphasis on examining internal factors for effective change. Two theories described the methods which internal changes work.

- **Self efficacy theory** – maintaining a behaviour depends on a person’s sense of potential mastery over that behaviour (control). People who initially believe they can achieve self-mastery over a behaviour will probably continue attaining the behaviour goal, while those who lack the initial belief of self-mastery (no control) usually relapse into old behaviour routines. See Figure 4.

- **Attribution theory** – people are more likely to maintain self-mastery over a behaviour if they believe the change is attributed to their own efforts rather than by an external source. Relapses are less likely than with external force.

In a teaching/learning environment, it is important to assist the learner to develop a self-attribution explanation of effort (internal, control). If the person has an attribution of ability (internal, no control) as soon as the individual experiences some difficulties in the learning process, he or she will decrease appropriate learning behaviour (e.g., I'm not good at this). If the person has an external attribution, then nothing the person can do will help that individual in a learning situation (i.e., responsibility for demonstrating what has been learned is completely outside the person). In this case, there is nothing to be done by the individual when learning problems occur.

Factors which appear important for behaviour modification appear to be teaching the behaviour in a warm, accepting yet business-like atmosphere, which promotes persistent effort and favourable attributes and incentives such as privileges and rewards. In most self-motivation scenarios, without rewards, success is more difficult. However, once the behaviour is learnt, reward is no longer beneficial, or at least inner rewards (self-confidence) become far more important. Success is more predicably motivating than failure. Ordinarily, people choose activities of intermediate uncertainty rather than those that are difficult (little likelihood of success) or easy (high probability of success). Because learning requires changes in beliefs and behaviours, it normally produces a mild level of anxiety. This is useful in motivating the individual. However, severe anxiety is incapacitating. If anxiety is severe, the individual’s perception of what is going on around them is limited. Thus, individuals must not set unrealistic goals for themselves. Striving for excellence motivates you; striving for perfection is demoralising. Setting a goal is also important to achieve success. It also
offers an opportunity for success. Both affiliation and approval are strong motivators. People seek pouters with whom they can compare their abilities, opinions and emotions. However, these motivators can lead to conformity, competition and other behaviours that may be negative.

There are a variety of specific actions that teachers can take to increase motivation. In general, these fall into the two categories discussed above: intrinsic motivation and extrinsic motivation. As a general rule, teachers need to use as much of the intrinsic suggestions as possible while recognising that not all students will be appropriately motivated by them. The extrinsic suggestions will work, but it must be remembered that they do so only as long as the student is under the control of the teacher. When outside of that control, unless the desired goals and behaviours have been internalised, the learner will cease the desired behaviour and operate according to his or her internal standards or to other external factors.

Table 1. Methods for stimulating intrinsic and extrinsic motivation. Adapted from Stipek.

<table>
<thead>
<tr>
<th>Intrinsic</th>
<th>Extrinsic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain or show why learning a particular content or skill is important</td>
<td>Provide clear expectations</td>
</tr>
<tr>
<td>Provide a variety of activities and sensory stimulations</td>
<td>Give corrective feedback</td>
</tr>
<tr>
<td>Set goals for learning</td>
<td>Provide valuable rewards</td>
</tr>
<tr>
<td>Relate learning to student needs</td>
<td>Make rewards available</td>
</tr>
<tr>
<td>Help student develop plan of action</td>
<td></td>
</tr>
<tr>
<td>Create and/or maintain curiosity</td>
<td></td>
</tr>
<tr>
<td>Provide games and simulations</td>
<td></td>
</tr>
</tbody>
</table>

In all motivation theories, the emphasis is on positive inner drive which benefits the individual both materially, ethically and morally. Greg Anderson, a USA basketball player crystallised the importance of genuine motivation by remarking that ‘when we are motivated by goals that have deep meaning, by dreams that need completion, by pure love that needs expressing, then we truly live life.’ Though no grand theory of motivation exists, it is so necessary for learning that it should be personal explored by all, whether they are students of veterinary science or students of life.

Occupational hazards

What is the use of being good? What is in it for us? Most of the time what we do during the day is motivated by expectations and needs. We pay that bill, treat that sick pet, talk to a client about health prevention in puppies. A hundred actions that require our time. Are we just doing our job, or is there some deeper motivation behind it? And if there is a deeper motivation, is it an altruistic one or are we just out for our own betterment? As Plato once said, ‘Good people do not need laws to tell them to act responsibly, while bad people will find a way around the laws.’ Why do we follow social laws? Are they there for minimising harm and no other reason?

Recently the Victorian government passed a law restricting speed limits in residential areas to 50 km/hr and some drivers were outraged at this speed restriction despite knowing it improved safety to suburban pedestrians. They saw it as a subtle means of increasing government revenue through more speeding fines. However, the only people I found who were happy with the new law were those who already drove at 50km/hr in the suburbs. It appeared to me that the least upset and most happy of drivers were those that were already obeying a self-imposed law long before a government statue enforced it. It appears from this simple corollary that sometimes acting within the framework of ethical and moral laws liberates us from the fear of transgression and derives for us substantial inner peace and contentment.

We spend a lot of our time dealing with relationships that exist on a personal and professional life. These relationships, which are the bedrock of life, contribute as much grief as they do joy. Being a part of this interaction, of this interpersonal ‘karma drama’ is how we grow as a person. No one can flourish as a person in isolation any more than a flower can flourish without sunlight. To attempt to
subvert or suppress our inner needs, issues, difficulties and fears will only fester into toxic psychological wounds that more resemble an abscess than a splinter. I am often reminded by clients that the subtle annoyance between myself and others are not to be despised. These grains of sand within us are the seeds for future pearls when we finally choose to open ourselves to others.

**Occupational self-harm**

Self-harm refers to behaviour that is detrimental to life either in the short or long term, and includes drug and alcohol abuse, deliberate self-injury or suicide. Recent surveys in Australia have shown that most veterinary graduates were glad to have done the veterinary course, but for about one-quarter their career had not lived up to expectations and almost half would not do it again if they had their time again. Stress, hours of work, difficulties in balancing personal life with career and low income were important concerns for many. Low income may contribute to the low number of males entering the veterinary profession.

Occupation has a significant affect on suicide rates. Certain occupations have a higher risk of suicide than others. These include veterinary surgeons, pharmacists, dentists, farmers and doctors. Suicide in veterinary surgeons is around three times more common than in the general population and in pharmacists, dentists, farmers and doctors it is around twice as common. Many of these are occupations allow easy access to both the methods and knowledge to commit suicide. In addition, these occupations may be particularly prone to stress and, in the case of vets and farmers to financial difficulties and isolation.

In farmers, the presence of a crisis on the land (e.g. following the foot-and-mouth disease outbreak in the United Kingdom) rates of suicide can rise dramatically. After the mass slaughter of contaminated animals in conjunction with BSE in England and Europe, local churches took a much closer look at the impact mass slaughtering of animals had on farmer's psychological states. Rural families and veterinarians had to bear the emotional consequences of the circumstances of the loss of these animals. Consequently, pastoral services initiated an ecumenical service to deal with post-traumatic stress in the community.

Dr Murray Gibb (New Zealand Veterinary Journal Aug 2000) reported that, ‘those entering clinical practice must rapidly come to grips with the realities of case management. Vets working in country districts face added pressures. Rural clinical work has its own unique challenges both professionally and personally. Long hours of physically hard and sometimes dangerous work, and the need to offer on call after hour’s service combined with professional isolation creates a tough working environment. TV soaps portray standards of service, often at odds with the reality of the real world down on the farm. From time to time this leads to casualties sometimes, unfortunately, without any prior warning and with tragic consequences.’

In most developed countries, suicide rates reached a peak in 1960s and have largely been decreasing ever since. There has however been an increase in suicides among young men in the 1980s. In most developed countries, suicide is responsible for more deaths per year than road traffic accidents. Governments have attempted to reduce suicide rates by restricting the access to lethal methods, as well as improving the care and treatment of people with a mental illness. All of the evidence suggests that more women experience such mental health problems as anxiety and depression, but are less likely to act upon them in self-harming ways. Men also more commonly abuse alcohol and drugs, both of which are implicated in suicides. Between 1980 and 1990 the suicide rate for men aged 25-44 increased by approximately a third and by 85% in men aged 15-24. For women the rates for all ages have fallen with the greatest falls taking place in those aged 45 and over. It is the first time since 1911 that male and female suicide trends have moved in opposite directions.
A variety of causes is responsible for the increase in young male suicide with no one cause predominant. Unemployment is a factor. For example, an unemployed person is two to three times more at risk of suicide than the general population. Although no direct link exists between unemployment and young male suicide there may be an indirect link from the effect of unemployment such as poverty. The increase in the proportion of unmarried young men may be another factor. Marriage is a protective factor against suicide in men, and that half of the increase in young male suicide might be due to the smaller proportions of young men that are married. One area of agreement is that the increase in drug misuse amongst young men has contributed to the rise in suicide. There is also a sense of heightened anxiety and increased family problems affecting young people. The increase in drug misuse amongst young men has contributed to the rise in suicide. There is also a sense of heightened anxiety and increased family problems affecting young people. Childhood experiences, especially sexual abuse, may also be a contributing factor. Childhood experiences of traumatic incidences might in some cases be recalled only poorly, but usually have more meaning and influence than do memories for positive experiences.

Depression is also one of the more reliable predictors of suicide, though its presence does not necessarily equate to suicide as an outcome. The importance of demonstrating an association between depression and suicide lies in the opportunity it gives for prevention. The improved detection of depression by primary care professionals, and improvements in treatment and care are all possible routes for suicide prevention.

Self-injury can be quite different in intent from attempted suicide because the injuries inflicted enable the person to carry on living or to cope with difficult feelings rather than to end their life. The most common form of self-injury is cutting but it can also include bruising, scraping, burning and other self-inflicted wounds. It is generally believed that self-injury is twice as prevalent among women as it is among men, although it is thought that the difference may be becoming less marked. Statistics on self-injury are unreliable however, because many incidents are not reported. According to a survey performed for the Bristol Crisis Service for Women in 1994/95, 90% of a sample of females who had cut themselves and a third had inflicted blows or scalded themselves. Seventy four percent had begun self-injuring during childhood or adolescence (0-19 years) and 69% had been inflicting injuries on themselves for more than five years. It is widely accepted that self-injury is the result of profound emotional pain. The injuries can release feelings of self-hatred, anger and anxiety, and can provide a means of self-punishment or of taking control. Whether or not they intend to kill themselves, people who self-injure must be treated with care and given the appropriate physical treatment for their injuries. Seeing such behaviour as ‘attention-seeking’ rather than a genuine psychological problem only serves to aggravate the underlying issues of low self-esteem amongst those afflicted with self-injury.

Numerous epidemiological studies report increased prevalence rates for women as compared to men for stress-related disorders such as acute stress disorder, post-traumatic stress disorder, and major depressive disorder. Stress disorders disrupt work and home life and pose a high risk for suicide. Multiple factors contribute to the increased vulnerability in women. Physiological differences account for some of the differential. Other factors that make a significant contribution to the overall risk for health problems in response to stressors or trauma include the nature and meaning of the trauma and accessibility of resources.

Most people who commit suicide do not have access to easy means or assistance. While suicide is legal in Canada, the government deliberately controls many dangerous drugs and devices as a part of its suicide prevention program. Experts estimate that further restriction of access to guns, dangerous drugs, and high places would reduce youth suicide by about 18%. In fact, restricting access to the common means to commit suicide is an important component of suicide prevention programs. One study showed that suicide by firearms decreased significantly in Canada after Bill C-51 restricted firearms and suicides by other means failed to rise in response.

The likelihood of a person committing suicide depends on several factors including particular events (e.g. loss, broken relationships), personal history (e.g. previous attempts, family history of suicide), personal characteristics (e.g. time of life, ability to cope and level of social support, illness), and talking or writing about suicide. Risk factors include readily available lethal methods, an indication of intention, setting a deadline, or if the individual is uncharacteristically ‘tidying up loose ends’. There are steps which friends or family members can take to prevent suicide. These include trusting your friendship/relationship. As well, if a friend/family member strikes you as being in emotional pain, act and get help. A suicidal person gets relief from sharing his or her pain and thoughts of death. Being asked about suicide will not negatively influence a person who is not suicidal. Talking with someone who is really listening has a powerful effect. Do not expect perfection from yourself.
when trying to help a friend or family member. If you try, your effort will be good enough.

The art of overcoming trauma

'The problems of this world are so colossal, so demanding and so urgent that we really should ensure we finish our breakfast first.'

None of us are immune to trauma. From growing up, to getting married, to starting a family, to getting a job, and having a car accident, these events are 'rites of passage' into adult life. But many people find them traumatic. Some experience symptoms of stress and anxiety during and after these experiences. Unfortunately, many people good and bad, rich and poor suffer from physical and psychological abuse.

'Trauma' is usually defined psychologically as a threat to our life, either physically or psychologically. The trauma evokes the death instinct. We feel we 'could have died' or came close to being killed even if it was a relatively minor car accident or an argument in the express lane of the supermarket. It is the perception that we are unable to control the experience which is pivotal to its effect on us. Studies on trauma show that its impact psychologically is dependent upon the duration and severity of the abuse. From many studies worldwide, two types of traumatic events are recognised:

- those that involve constraint (e.g. physical abuse, torture)
- those that involve intrusion (e.g. psychological/sexual abuse, rape).

In many situations such as acute physical, sexual or psychological abuse, a person is helpless to resist and against which there is no possible defence. In such circumstances where the experience is forced, an altered psychological state – dissociation - arises. In this dissociated state (akin to a state evoked by LSD use), images are stored (encoded) subconsciously as unscripted memories (like a foreign movie without subtitles). In other words, dissociated states produce memories that have not been consciously compartmentalised or made sense of. Dissociation impairs the ability of the brain to accurately sequence incoming memories, thus relegating them to the subconscious as a neurosis, to be categorised at a later date.

A common sequela of trauma is post-traumatic stress (PTS). Post-traumatic stress can occur in 30% of people exposed to severe trauma at some variable time after the traumatic event; usually weeks, months or years. PTS is also more likely in cases of multiple or sequential traumas, e.g. a car accident resulting in disfigurement, followed by divorce. The flashbacks, where the trauma is remembered, re-experienced consciously as images or feelings, or recalled in dreams, result in various states of anxiety. Chaos theory, which is discussed later, has shown to be a good predictor of how images re-emerge from the subconscious. Originally thought to be random, flashbacks appear to follow definite nonlinear patterns (Elliott waves). Though this is nice to know, it doesn't help the sufferer who often experiences intense emotions of anger, guilt, denial and rage related to these unscripted memories. The consequence of these flashbacks is usually a state of panic associated with anxiety, insomnia, distressing and recurrent dreams, flashback imagery, intrusive thoughts, irritability, poor concentration, avoidance behaviour and detachment. Some symptoms (such as inability to recall parts of the trauma) occur in up to 35% of sufferers. Men are significantly more likely than women to suffer with irritability and to use alcohol to excess.

The images associated with flashbacks are linked with the dissociative trauma and arise in an unconscious manner telling a story for which words have not yet been found. These memories which emerge are usually heavily laden with emotional dialogue that need to be consciously resolved (translated). To achieve this, the subconscious delivers the traumatic experience in piece-meal scripts (apparently random, but mathematically predictable) to the conscious mind in an attempt to unburden the subconscious from confusing (indecipherable) memories. It is this apparent chaos and randomness of re-emerging memories that causes the sufferer to consciously experience anxiety, not knowing how or when the next painful memory will occur. This overwhelming anxiety is often an indicator of potential psychological growth. It is re-experiencing the emotions associated with the experience, and resolving them into non-harmful and meaningful insights (renunciation) that is vital to overcoming trauma and maintaining psychological health. If the survivor is willing to immerse themselves in the chaos of painful memories (what has been called ‘search activity’), they can reorder the encoded scripts and effectively remove the ‘weight’ of the emotion. Once the trauma has been rescripted, the process of deconditioning the mind can begin. However, the process of scripting traumatic events is
the most arduous task.

The syndrome of post-traumatic stress, involving depression, guilt, anger and fear, is non-discriminatory in who is affected by it. Severe trauma invariably leads to some form of PTS regardless of a person’s background, beliefs, religion or gender. PTS also develops independent of the severity of the trauma but directly dependant on the risk to life caused by the trauma. For example, war refugees are as prone to PTS as those who also experience torture prior to becoming refugees. Here is illustrated that the fear of death is far more overwhelming psychologically compared with violations of human rights. What is promising is that individuals can attain resolution helped in part by developing coping mechanisms, evoking family support and participating in survivor groups, etc. It has also been shown that PTS is less severe and of shorter duration in those with better education and who develop religious practises post-trauma.

Continuous exposure to violence, both as victims and as witnesses, in the absence of adequate support services may result in sufferers turning to drug use in an attempt to deal with the harsh realities of their daily lives. In chronic trauma, people with a lack of educational and employment opportunities increase their risk for further physical, emotional, and sexual abuse. Exposure to traumatic experiences deepens their sense of worthlessness (‘Nobody gives a damn if I live or die’) and dependence on drugs. This develops into a vicious cycle of further stress, substance abuse and consequent risk of trauma.

The process by which PTS occurs and is resolved is best understood through Jungian psychology. The Swiss psychiatrist Carl Jung described how trauma fractures the ego. Individuals vary in how trauma affects the functioning of their ego and the methods they use to contain or handle the crises that arise. One always aspires to realise the goal of reunifying the ego (return to a pre-traumatic state of well being) through a process of ‘emergence,’ where order is established from chaos. Jung states that the unified ego can never be attained, but may be realised periodically during the course of one’s life. Research shows that psychotherapy that uses methods which avoid recollecting trauma and focus on developing social support were less successful than those therapies which aimed to recollect trauma and develop the sufferer’s ability to ‘distance’ themselves from the trauma. Avoidance, it seems, only exacerbates the problem in the long term.

Most anxieties attributed to PTS relate primarily to an underlying fear of death (death or annihilation anxiety). Though a fear of death is a normal biological entity in all animals, in humans it manifests not only in behavioural but also cognitive (psychiatric) disorders. Anxiety over death can also manifest psychologically throughout life in the symbolic form of fantasies. Like most PTS anxieties, it can arise with or without anticipation, be accompanied by controlled or uncontrolled anxiety, and result in defence mechanism and recalcitrant psychological resistance to intervention.

What appears most important with trauma is acknowledging its occurrence - ‘unveiling.’ Survivors who hide or fail to disclose their trauma, especially when it is unwitnessed by others, or if they expect disbelief or disregard from others, only complicates the healing process. Attempting to re-organise and rescript trauma memories is vital for its resolution. Without rescripting, the memories themselves become traumatised, losing their power to be able to be used for transformation. Ongoing denial of the trauma through dissociating oneself from the experience and negatively appraising the memories is helpful in acute serious trauma but in the long term merely prolongs and habituates the symptoms. Survivors then suffer in a manner that subverts meaning, dampens vitality as well as pain, and arrests empathic connectedness. Restoring a person’s sense of being witnessed by ‘unveiling’ the event and having it acknowledge by others was vital for Holocaust survivors to restore their will to overcome the trauma rather than resign to their inner terror. The Buddha gave a classic explanation of overcoming suffering. He said that if someone shoots you with an arrow, do you ask who shot the arrow, who made it and why he shot you? Is it not better to remove the arrow and know how not to have it happen again?

Asking how allows us to learn from experience, whereas asking why is a metaphysical question that is inordinately difficult to answer. Sometimes art has been extremely effective in helping survivors deal with trauma. Because of its indirect, unaestheticised and dialogic nature, art may be the only possible medium for some people to effectively convey any representation of their trauma. The real ‘witnessing’ created in the art of trauma can act as an antidote to the annihilation of the ego that occurs in the
traumatic experience. The apparent absence of an ego after trauma, which both constitutes the core of trauma and precludes its representation, can be positively portrayed through this medium. Survival itself should be considered as a type of art when it is made possible by creative comprehension rather than more conventional forms of dialogue. Art can cover territory that survivors are unable to put into words and help the continuous struggle involved in attempting to ‘know’ trauma. Art has been shown to deal with and overcome the need to witness the trauma as well as dealing with the sensation of ego emptiness or execution.

In studies of families who have survived major life crises (e.g. war and famine), the events critically shape their identities. Creativity and knowledge have shown to play an important role in the expression of these tormenting events in not only the people but their children as well. For example, Holocaust survivor’s children are consistently more thoughtful, empathic, and aware of social and political inequities than others. Thus trauma is not exclusively an incident reserved to individual’s but as a collective experience. Placing the suffering of a group of individuals into a larger group context helps the surrounding families to resolve the suffering of the affected individuals. This diminishes individual liability so that the suffering does not have to be taken on personally. The cause goes beyond the individual and family. When this is not achieved, the struggle against family enmeshment continues. Seeing the suffering in a group context creates a different set of responsibilities, that of allegiance and closeness to the group. It promotes a need to find meaning in the suffering, a need to cope with the sense of identification with group loss. This urge for empathy is accompanied by its opposite, a wish to dissociate, and the need consequently to negotiate boundaries. The struggle for integration of various feelings becomes a part of their identity in the whole group. This suggests that any major trauma becomes a guide by which to live life rather than simply a recall of trauma or death. It also includes a continuous wake up call to vulnerability, a sense of burden, a ‘chronic’ sense of the seriousness and preciousness of life. This reflects the fact that suffering can be channelled into identity formation, integrated into an articulation of the meaning of life and a philosophy of life. Reshaping your self-image reshapes your life. What you imagine yourself as, is a projection of where you will most likely be in five to ten years. Often it is a hope of changing what we are that is the impetus to overcoming trauma. If we believe that we are stuck in our trauma, that no overcoming is possible, the only option is misery or suicide. Believing that change is possible is not necessarily about changing anything but one’s attitude.

Overcoming trauma demands our imagination and creativity as we struggle to express our unique story through any and all means possible. Art in all its forms has great power and passion for healing – it validates our human experience. Acts of creation keep us centred in the moment, where we can directly experience our emotions unburdened by the memories associated with them. Working at those inner emotions manifests artistically. It is not about creating great works of art, but using art as an instrument of great work. The thirteenth-century mystic Meister Eckhart put it thus, that ‘the outward work will never be puny if the inward work is great.’

Leadership skills

‘Since realisation signifies liberation, one arrives at the absurd paradox that man is subjected to the coercive duty to be free. Such a grave error of understanding entails anxiety, prevents inner pacification, reconciliation with oneself, the diminution of emotion – in short all the inner atmosphere of relaxation which governs liberation. This error also entails the need to teach others. That if I must achieve salvation, I must lead others to do the same. Our emotions, our desires, our fears, have no place in a true understanding.’

Hubert Benoir

The funny thing about humans is that once someone knows where they’re at, others want to join them. It is a mystery of human nature that leaders are often the people who know where they are going. And they often give the impression that you should join them. Why this is so has been a much researched phenomenon. Why did Hitler evoke such a huge following when the philosophers of his time knew he was tragically misguided. Was it a vision? Or a quest? Or was it just an emotional appeal?
Since humans have never been able to fashion a utopian society, it seems inevitable that there in any occupation of employees there will always be the leaders and the led. What is the same between human society and any other animal society is the formation of social structure. Thus, leadership requires an ability to effectively deal with conflicting emotional situations in a positive and meaningful way. Leaders might prefer to go the way of wolves and mimic alpha males by baring their teeth and snarling, or take the option of avian society and establish a pecking order, but maintaining human leadership through such outright aggression is a short-lived affair. Essentially, leaders establish and maintain their position through a more subtle method, language.

There are two types of leaders;
- leaders that lead
- leaders that follow

The first type of leaders (called master leadership) involves a person who has a direction they pursue and command the group to follow them. This form of leadership usually works at times of crisis; in fight or flight situations where urgent decisions need to be made. This method is useful at times of war, but even then is a poor motivator of the group and should be rarely used. Servant leadership is where a leader points to a direction and rather than saying 'Go,' they say 'Let's go.' They lead from the rear, rather like a rudder. Their most vital role is to ‘manage meaning’ for the group. This has been shown to be the most effective method of leadership. It heightens morale and enthusiasm, and avoids leadership fatigue. Such leaders offer a way to interpret and so react emotionally to any given situation that the group are yet to comprehend. As Lao Tse wrote in *Tao Te Ching*:

‘A superior leader gets things done with very little motion. He imparts instruction not through many words but through a few deeds. He keeps informed about everything but interferes hardly at all. He is a catalyst, and though things would not get done well if he weren’t there, when they succeed he takes no credit. And because he takes no credit, credit never leaves him.’

There is as much an art to leadership as there is a science. We probably assume that a leader is born, that it is a gift rather than something we could learn at school or college. In fact, leadership is mostly a learnt technique. However, some basic skills are required, primarily an intelligence to ‘read’ and ‘route’ people, from an emotional perspective. A leader must have the intellectual awareness to perform in ways that attract others by developing positive interpersonal relationships. This process initiated by the leader and developed among the group results in satisfying the group’s goals. Leadership is not about taking a group where the leader wants to go but in ensuring every member of the group has a sense of accomplishment and that their objectives are met. Great leaders are great simplifiers who cut through argument, debate and doubt and to offer a solution everybody can understand and remember. Leaders also understand that people only go where they want to. The leader follows, though a step ahead.

**Servant leadership**

Traditionally, organisations have a ‘top-down’ management approach. However, there is a gradual shift to other leadership methods. Servant leadership is one which is being successfully implemented in many settings. Servant leadership, first popularised by Sergiovanni, puts serving others as the number one priority. Characteristics of this form of leadership include listening, empathy, healing, awareness, persuasion, conceptualisation, foresight, stewardship, commitment to the growth of people and building community. Assumptions about the role of leaders has evolved over the last 25 years. For much of the 20th century, university administrators served chiefly as managers, adapting practices from the scientific management movement. They aspired, through good administrative practice, to support teacher autonomy in their classrooms. They often served as buffers between lecturers and the public, while striving to create a positive instructional environment. Partly in response to the effective schools movement and later the educational standards movement, principals and other school leaders have learned the importance of being instructional leaders, not just good managers.
Sergiovanni pleads that education leaders should lead learning, and not just instruction. Such leadership entails active engagement in questions of curriculum, instruction and teaching and a process of continuous improvement and change. Servant leaders see management as an active expression of values and commitment and maximising physical and human resources. It also requires that educational leaders know more about how children learn, about the learning needs of different populations, and about effective curricular and instructional approaches to improve student learning. They need to know how to use data and data systems to identify strengths and weaknesses, to improve teaching and learning, and to close achievement gaps based on race, ethnicity, poverty, disability, and language barriers. The USA, now primarily a ‘service-economy’ adopts servant leadership in many companies to improve individual morale and company profitability. A leader’s skills amount to returns in morale and profit. For every one percent improvement in service workplace morale, there is a two percent improvement in revenue. In most companies, workplace morale accurately predicts company profits and growth.

**Figure 5. Leadership skills**

- **Self-awareness**
  - Emotional self-awareness: reading one’s own emotions and recognising their impact; using ‘gut sense’ to guide decisions
  - Accurate self-assessment: knowing one’s strengths and limits
  - Self-confidence: a sound sense of one’s self-worth and capabilities.

- **Self-management**
  - Emotional self-control: keeping disruptive emotions and impulses under control
  - Transparency: displaying honesty and integrity; trustworthiness
  - Adaptability: flexibility in adapting to changing situations or overcoming obstacles
  - Achievement: the drive to improve performance to meet inner standards of excellence
  - Initiative: readiness to act and seize opportunities
  - Optimism: seeing the upside in events

- **Social awareness**
  - Empathy: sensing others’ emotions, understanding their perspective, and taking active interest in their concerns
  - Organisational awareness: reading the currents, decision networks and politics at the organisational level
  - Service: recognising and meeting follower, client, customer needs

- **Relationship management**
  - Inspirational leadership: guiding and motivating with a compelling vision
  - Influence: wielding a range of tactics for persuasion
  - Developing others: bolstering others’ abilities through feedback and guidance
  - Change catalyst: initiating, managing and leading in a new direction
  - Conflict management: resolving disagreements
  - Building bonds: cultivating and maintaining a web of relationships
  - Teamwork and collaboration: cooperation and team building

Leaders need enough intellect to grasp the specifics of the tasks and challenges at hand, but intellect alone will not make a leader. Leaders execute a vision by motivating, guiding, inspiring, listening and persuading through creating resonance (fostering positive emotions to bring out people’s best). Improving one’s emotional intelligence is the capacity to get optimal results from relationships with oneself and others. The simplest method, as shown in Figure 5, was popularised by Goleman in *The New leaders*.

Spirituality has not traditionally entered the workplace. However, in these turbulent times, where the world is growing more chaotic and unpredictable, leaders have been forced to respond to questions that have historically only been answered through spiritual traditions. How do I cope with uncertainty? How do I help others find meaning in their lives? What are my values? How can I act with courage and integrity? Leaders also play an essential role in helping people recognise that life is cyclical, unpredictable, and unstable and that they must engage it as such. This is little known facet of traditional management.

Whether a business leader is successful or not also depends on their resilience. More than
education, more than experience, more than training, a person’s level of resilience will determine who succeeds and who fails. Theories abound about what produces resilience, but three fundamental characteristics seem to set resilient people and companies apart from others. The first characteristic is the capacity to accept and face down reality. In looking hard at reality, we prepare ourselves to act in ways that allow us to endure and survive hardships: We train ourselves how to survive before we ever have to do so. Secondly, resilient leaders possess an ability to find meaning in some aspect of life. A leader’s values are just as important as meaning and are used as scaffolding in times of trouble. The third building block of resilience is the ability to improvise. The ability to solve problems without the usual or obvious tools is a great strength. One or two of these qualities make it possible to bounce back from hardship, but true resilience requires all three.

Although vets rarely require leadership skills commensurate with those of a corporate CEO, there are important ways of maximising interactions in general practice where relationships with clients and co-employees are important. Such methods include following your passion. There can be no destination if there is nothing inspiring us. Whether your motivation is to be rich enough to retire at forty, or have enough spare time to become a specialist, or a golf-pro. Our inner passions define our outer life. Whether we pursue our passions defines our life as a vocation or a distraction (from what we really want to do).

At the core of any company, there is a group of people who seem to call the shots, or, rather, all the shots seem to be called for their benefit. This core group can’t be found on any organization chart. It exists in people’s hearts and minds. It comprises the people whose perceived interests and needs are taken into account as decisions are made throughout the organization. In most companies, talking explicitly about this group is taboo; its existence seems to contradict the vital corporate premise that we all have a common stake in the firm’s success. In the best organisations, the core group can be a resource: Members represent the unique values and knowledge that distinguish their companies.

When core groups display independence, creativity, and power, the rest of the company follows. Such behaviour on the part of the company, in turn, creates value for shareholders, especially over the long term. But because of the core group’s enormous power, members need to make themselves aware of the signals they send, both intended and unintended. For better and for worse, the core group reinforces whatever it pays attention to. If you do not know who constitutes the core group in your business or what the employees represent to your business, you may find that leading them will be extremely difficult. If you want to move the business in a new direction, you may need to explicitly challenge the core group. Otherwise the rest of the organization will not go along.

A veterinary practice by definition is a group of vets and their support staff who have joined together to practice veterinary care. However, a group is more than that. Vet groups are composed of many different types of subgroups and group dynamics that are in constant flux and which may serve the group well or inhibit it from achieving its best performance. Understanding group dynamics is, therefore, one of the paths toward achieving excellence in the practice of low cost but fulfilling veterinary medicine. There are three basic types of potentially unsatisfactory group dynamics; homogenised, institutionalised and autocratic. Homogenised dynamics occur when vets act as though they must all participate in decision making. Managing the group can become deadlocked by one veto. Institutionalised group dynamics lead to an over reliance upon systems and procedures to control work. Flexibility, adaptability and creativity are often lost in the process. Autocratic group dynamics arise when a single individual assumes nearly absolute control of decision making. Each of these group dynamics contain positive and negative outcomes that must be considered when evaluating group performance. Sull, an eminent Harvard Business School lecturer had this to say on successful leadership:

‘What makes a great manager great? Despite differences in their personal attributes, successful managers all excel in the making, honouring, and remaking of commitments. Managerial commitments take many forms from capital investments to personnel decisions to public statements but each exerts both immediate and enduring influence on a company. A leader’s commitments shape a business’s identity, define its strengths and weaknesses, establish its opportunities and limitations, and set its direction. Executives can all too easily forget that commitments are extraordinarily powerful. Caught up in the present, managers often take actions that, while beneficial in the near term, impose lasting constraints on their operations and organisations. When market or competitive conditions change, they can find themselves unable to respond effectively. Managers who understand the nature and power of their commitments can
wield them more effectively throughout a company’s life cycle. Entrepreneurs can avoid taking actions that imprint a new venture with a dysfunctional character. Managers in established enterprises can buttress past commitments that retain their currency and learn to recognise when commitments have become roadblocks to needed changes. Before making important decisions about, say, operating processes or partnerships, you should always ask yourself: Is this a process or relationship that we can live with in the future? Am I locking us into a course that we’ll come to regret?
'There are only two answers to this question of existence. In one, man attempts to find again harmony with nature by regression to a prehuman form of existence, eliminating his specifically human qualities of reason and love. In the other, his goal is the full development of his human powers until he reaches a new harmony with his fellow man. The first answer is bound to failure. It leads to death, suffering and destruction. The second answer requires the elimination of greed and egocentricity, it demands discipline, will and respect for those who can show the way. I believe that man's growth is a process of continuous birth, of continuous awakening. The great leaders of the human race are those who have awakened man from his half-slumber. The great enemies of humanity are those who put it to sleep, and it does not matter whether their sleeping potion is the worship of God or that of the Golden Calf.'

Eric Fromm
Creativity

Creativity is the ability to invent or imagine complex patterns and derive meaning from them. It is the fundamental requirement for all discovery, invention and is the opposite energy to destructivity. Whether creativity manifests simply as procreation or as an urge to developing a new way of treating a medical problem, this instinct is a necessary part of human life. When the urge to create is lost or taken away from us, it diminishes our sense of self-worth, devalues our ability to contribute in a meaningful way in society and leaves us feeling ungrounded and lost.

The origins of creativity lie within the borders between conscious and subconscious thought. It is both a rational act yet also contains a certain degree of what could be defined as irrational - imaginative and symbolic. Living in a state of psychic unrest, in a borderland, is what makes poets write and artists create. Creativity has been described by Carl Jung as *libido* and in its most base form manifests as the sexual urge. Though this in itself is an important part of mateship and love, it is only a small facet of creativity. Nor does academic or artistic excellence necessarily implying a heightened state of sexuality. There are many examples in history of scientific and artistic outpourings from celibate scholars; for example Isaac Newton, Pythagoras, Blaire Pascal, Franz Kafka, Thoreau and St Augustine, exemplifying how creativity can manifest above the crotch.

Sex for most of us is a cherished experience and - celibacy aside - is a vital component of emotional intimacy. Sex, like money and art, is an instrument of self-expression, and like all forms of power should be disciplined rather than deified or denigrated. e.g. the prostitute who exchanges sex for money, or the artist who exchanges art for sex. Inherent in creativity is an implied form of sacrifice, whether this be the sublimation of sex for a ‘higher’ cause as in the case of monastics, or a parent’s sacrifice of their career until their children are old enough to fend for themselves.

Examples of creativity abound in the natural world; evolution of the cosmos and the ecosystem of this planet are classic examples, as is social and economic developments. Even the human heart rate interval shows signs of creativity that are directly dependant upon human emotions and is a significant indicator of human physical and psychological health.\(^3\)

The anatomy of creativity

The human hypothalamus is thought to be the seat of creativity. Digoxin status and neurotransmitter patterns have been studied in creative and non-creative individuals. In creative individuals, alterations in neurotransmitters occur; specifically, increases in hypothalamic digoxin synthesis, decreased membrane Na\(^+\)/K\(^+\)-ATPase activity, increased tryptophan catabolites (serotonin, quinolinate and nicotine) and decreased tyrosine catabolites (dopamine, noradrenaline, and morphine). There is also a shift to right hemispheric cerebral dominance.\(^4\) Using MRI, highly creative people show increases or unchanged activity in regional blood flow in the frontal cerebral hemispheres. Low creativity is reflected in decreases in these areas of the brain. But low creativity does not equate to low intelligence since uncreative people can still have superior logical-inductive ability and perceptual speed.\(^5\)

The creative products that emerge from individual scientific careers and communities of creative scientists supports the argument that scientific creativity constitutes a form of constrained stochastic behaviour. That is, it can be accurately modelled as a quasi-random combinatorial process where the product (invention), person (scientist), and process (imagination) must be integrated into a unified view of scientific creativity.\(^6\) Let us take a classic example of the creative process from the mathematician Carl Friedrich Gauss. If we are asked to add up all the numbers from one to one...
hundred, there are two ways to do this. The first is the laborious method of counting one plus two plus three and so on until one hundred. This method is not only slow, but tedious and prone to error. Carl Gauss, at the tender age of eight, devised a simple method of solving this problem when he noticed that when he added the first and last numbers together (one and one hundred) and then the added the second and next-to-last numbers, that they each added up to one hundred and one. He ascertained that there are 50 such pairs between one and one hundred. He therefore rightly surmised that the total of the numbers from one to one hundred is 101 x 50 = 5050. Gauss showed how seeing patterns in what appears as a linear model leads to creative solutions. Ingenuity could be victorious over drudgery through what mathematicians call an ‘elegant’ solution to a problem.

How are artists creative? It is an unexplainable phenomenon, perhaps driven by an inner need to represent in the physical reality an inner reality which has a strong need to be expressed or heard. Other forms of creativity can be interpreted as compensations for weakness in other areas. An example of this is in dyslexia, long identified as a disease of deficit. Individuals with dyslexia normally have left-cerebral hemisphere deficits, but this appears to be compensated for by increased right-hemisphere strengths. Strong associations between dyslexia and speed of recognition of impossible figures (a global visual-spatial task) may be due to an ability to process visual-spatial information globally (holistically) rather than locally (part by part) as occurs in unaffected individuals\textsuperscript{433}. This suggests that creativity may occur through holistic events globally within the brain rather than in a localised fashion.

Studies of university students has shown that creativity and complex thinking styles are significantly related with holistic modes of thinking, and diminished by analytic modes of thinking. Analytical thinking, which favour generalisations, normalisation and simplification are not as successful in novel conceptualising compared with holistic thinking\textsuperscript{434}. Necessity it seems is the wet nurse of invention and it is the necessary use of global/lateral thoughts which favour the emergence of novel ideas. In the arena of medical ethics, it has shown that the creative application of ethics in novel situations allows medical practitioners to more effectively deal with apparent inner conflicts of meaning in an ethically-charged situation. Teaching practitioners to integrate external notions of moral/ethical conduct into their own ethical makeup (‘to become moral agents’) is far more successful than trying to force ethical standards upon them\textsuperscript{435}.

As to the evolutionary origins of creativity, these are easily determined based on needs for evolutionary fitness and survival. But the creative drive itself has an interesting emergence in the human brain. Studies have shown that the brain, like subcutaneous fat, is particularly rich in lipids and since the microconnections of the brain are substantially lipid in nature, it is suggested that changes in lipid metabolism are what differentiated humans from the great apes. The growth in brain size and in the quality of subcutaneous adipose tissue may have occurred because of changes in the proteins which regulate the rate of delivery of fatty acids to tissues, notably lipoprotein lipases and fatty acid binding proteins. The creativity which occurred one hundred thousand years ago may have resulted from changes in phospholipid-synthesising, remodelling and degrading enzymes which largely determine the microconnectivity of neurones\textsuperscript{436}.

Exactly how do creative thoughts arise? From studies on schizophrenics, scientists have conjectured that it is a special method of conceptualising ideas, known as magical ideation (MI), which holds the key. Highly creative people who are not schizophrenic have higher levels of magical ideation (for example, seeing a conceptual similarity between an apple and arrow, by considering the tale of Robin Hood). The tendency to link uncommon non-obvious ideas may not only be the basis of paranormal and paranoid ideas in schizophrenia, but appears to be a critical prerequisite for creative thinking\textsuperscript{437}. From an evolutionary context, humans appear to have emerged as a social entity and the majority of evidence suggests that the flexibility, agility and creativity of the human mind was abetted by tensions and reconciliations between two disparate perspectives, which express as a ‘personal self’ and a ‘social self,’ moulded by survival pressures\textsuperscript{438}. What is also fascinating is that highly creative people are more likely to accept rather than deny aspects of their personality such as inherent aggressive impulses which are essential to natural creativity. A total denial of these impulses is typical in women with breast cancer\textsuperscript{439}.

Family studies indicate that schizophrenia is associated with an increased risk of schizotypy, manic-depression, dyslexia, sociopathy and psychopathy. On the other hand it is also an indication of an increased likelihood of high creativity, leadership qualities, achievements in many fields, high musical skills and an intense interest in religion. From this, it could be theorised that the characteristics of creativity which are caused by variations in phospholipid biochemistry are responsible both for
schizophrenia and for our human creativity. This would help to explain why schizophrenia is present to approximately the same degree in all races. It is the illness which could well have made us human prior to the separation of the races.

The psychology of creativity

‘The spirit of creation is simply the spirit of contradiction.’
Jean Cocteau

The writer Antonin Artaud once said that it is a universally accepted truth that no one has ever written, painted, sculpted, modelled, built or invented except literally to get out of hell. Whether or not this is true, it is known that creativity usually stems from a conflict which needs to be overcome, be it an emotional, ideological, technological or social one. What creativity does arise, must be expressed. What you try to bury just ends up burying you.

In business, creativity manifests as imaginative procedures, testing new skills, trying and designing new products and markets. But how do creators come up with new ideas? What most creators use is not new ideas but new ‘applications’ for existing ideas (a process called task unification). By changing product components, an existing product can then have multiple uses. For example, the defrosting filament in an automobile windshield that also serves as a radio antenna. Another example is using the dependent relationship between lens colour and external lighting conditions to develop eyeglasses with a lens that changes colour when exposed to sunlight. Ron Howard’s film ‘Apollo 13’ reveals the grace under pressure that is a classic example of creativity. Although creativity is often considered a ‘luxury good,’ of concern mainly for personal enrichment, the arts, and performance improvement, in life-or-death situations it is the critical pathway not only to success but to survival. In the Apollo 13 case, the original plan for a moon landing had to be transformed within a matter of hours into a return to earth. By precluding failure as an option at the outset, both space and ground crews were forced to adopt a new perspective on their resources and options to solve for a successful landing. This now-classic problem provides a range of principles for creative practice and motivation applicable in any situation.

Rewarding creativity has been a successful motivation in both teaching and corporate environments. Repeatedly giving students reward for creative performances increases their creativity in subsequent tasks. Expected reward for high performance also increases creativity by enhancing perceived self-determination and, therefore, intrinsic task interest. Additionally, it has been found that an employees’ intrinsic job interest results in a positive relationship between expected reward for high performance and creative suggestions offered at work. Employees’ perceived self-determination also creates a positive relationship between expected reward for high performance and the creativity of anonymous suggestions for helping the organization. Cultural differences also show an effect on creativity. For example, in Japanese society, where greater emphasis is placed on examining sources of failure show that those who failed at a particular task persisted more than those North American counterparts in achieving success.

Knowledge vs. creativity; how one can hinder the other

‘Art is science made clear’
Jean Cocteau

There is a parochial myth-cum-fact amongst scientists that intellect is the instigator of scientific discovery. Nothing could be further from the truth. Einstein definitely had an off-the-Richter-scale IQ, but there are many with even greater IQs who are still struggling to tie their shoelaces. It makes as much sense to say intellect invents as it is to say a calculator created the prime numbers. All true inventors, whether in the field of the arts or science, create from a mental place where conscious thoughts are not at the fore. Even the greatest scientists report that their creative breakthroughs come at times of mental quietude. In a survey of science’s most eminent researchers, including Einstein, it has been shown that their thinking plays only a subordinate part in the brief, decisive phase of the creative act itself. A need to create is important – a psychological urge to invent – before anything is created. But one cannot theorise creative works. In retrospect, we can analyse why something was invented, but to rationally and logically attempt to do so is essentially flawed. No one set out to invent electricity. It was discovered. Whether it is by accident, or inspiration, a vision in a night’s dream, or an instant’s
realisation, creativity just ‘happens’. That’s not to say that intellect is divorced from the procedure. Creativity is the spark – the mind is merely the tinder.

Experts generally solve problems in their fields more effectively than novices because their well-structured, easily activated knowledge allows for efficient search of a solution space. But what happens when a problem requires a broad search for a solution? One concern is that individuals with a large amount of knowledge may actually be at a disadvantage because their knowledge may confine them to an area of the search space in which the solution does not reside. In other words, technical knowledge may act as a mental limitation, promoting fixation in creative problem-solving attempts.

Entrepreneurs, sales executives, and marketing managers often go to great lengths to demonstrate how their new concepts are practical and profitable, only to be rejected by corporate decision makers who don’t seem to understand the value of the ideas. Why does this happen? Studies of Hollywood executives who assess screenplay ‘pitches’ have shown that the person on the receiving end – the ‘catcher’ – tends to gauge the pitcher’s creativity as well as the proposal itself. An impression of the pitcher’s ability to come up with workable ideas can quickly and permanently overshadow the catcher’s feelings about an idea’s worth. Catchers subconsciously categorise successful pitchers as ‘show runners’ (smooth and professional), ‘artists’ (quirky and unpolished), or ‘neophytes’ (inexperienced and naive). The research also reveals that catchers tend to respond well when they believe they are participating in an idea’s development. As Oscar-winning writer, director, and producer Oliver Stone puts it, screen-writers pitchers an idea should ‘pull back and project what he needs onto your idea in order to make the story whole for him.’ To become a successful pitcher, it is essential to portray yourself as one of the three creative types and engage your catchers in the creative process. By finding ways to give your catchers a chance to shine, you sell yourself as a likeable collaborator.

The mad artist syndrome

_We work in the dark – we do what we can – we give what we have._

_Our doubt is our passion and our passion is our task._

_The rest is the madness of art._

Henry James

Artists are fascinating people. The madder they appear, the more we seem to be attracted to them. Like road kill, we can’t help but look, in spite of morbid repulsion. Who could turn away from Salvador Dalí’s _The Crucifixion_ without awe of its splendour but also a lingering dreadful of its sacrilegious impact on the painter? Studies of how an artist thinks has expanded our understanding of the creative process. Picasso for example, would mentally travel around geometric objects and go through a process of visual disconnection of their natural form and rediscovering their geometric lines. In his classic painting _Les Demoiselles d’Avignon_, the triangles and circles become plastic materials but they do not form perfect Euclidean tridimensional spaces where objects must keep constant sizes and proportions. Thus, Picasso discovered cubism.

Freudian psychologists argue that it is always a misdirected Oedipus complex that inspires artists. If Michelangelo were a heterosexual, Freud reckoned the Sistine Chapel would have been painted basic white and with a roller. Ever since Freud first ventured into the problems of creativity, psychoanalysis has stressed the darker, negative aspects of art. Plato, long ago, believed the artist to be divinely inspired and therefore mad. Freud’s classical theory of the psychogenesis of art - that art arises from sublimation of sexuality - is now well-known and respectable. But is it accurate in today’s world? The creations of the artist, in Freud’s view, are primarily an expression of unresolved neurotic conflicts - usually sexual. The artist is pictured as a sexually-frustrated childish neurotic who weaves his wild fantasies as a substitute for his unsuccessful attempts at fulfilment in the real world. His painting may, in the Freudian interpretation, be compared to the symptoms of the neurotic. For Freudians, the artwork is ultimately a mere manifestation of a neurosis, and the artist is always a sick man. The classical ‘mad’ artist is thought to be a person with an altered ego-state that is primarily narcissistic and attempting to resolve an Oedipus complex. Their often grandiose approach to their artistic canvas is often a manic defence to overcome the artist’s annihilation anxiety (fear of death). Upon seeing the blank canvas, the artist thus appears to unconsciously attempt to overcome separation from their maternal Oedipal. It is, however, difficult to discern the line between creativity and madness. This presents a particular hazard for psychologists, whose failure to recognise real potential can result in undermining the individual’s developmental striving. This should encourage us to consider the dilemma
of the gifted individual when excessive tension arises between absorption in one’s medium versus needs for recognition. It is said that to be a great artist you don’t have to be mad to be successful, but it certainly doesn’t hurt. Significant research points to above-average levels of psychopathology in groups of outstanding individuals working in the arts. An interesting connection between creativity and sensation-seeking is regularly observed. Psychoanalysis is ambivalent about creativity and its own creative potential. On the one hand, psychoanalysis offers enormous resources for elucidating obstacles to creativity, that way of living, making and relating to self and others that is fresh, vital, unpredictable and open to feedback and evolution. On the other hand, analysts see the fundamental and singular motives of creativity as an unconscious undertaking to serves the author’s ends.

What has been shown is that those considered more artistically creative (e.g. advertising directors, artists, etc) are generally more neurotic and more open to experience than those considered less creative. They are usually more extrovert and less conscientious as well. Personality profiles of highly creative marketing advertisers showed low levels of ego control. These artists have features of ‘pervasive developmental disorder,’ including impairment in social interaction and communication as well as restricted repetitive and stereotyped patterns of behaviour, interest, and activities. They demonstrate a strong preference for a single art medium and restricted variation in artistic themes. None understood art theory. Some autistic features contributed to their success, including attention to visual detail, a tendency toward ritualistic compulsive repetition, the ability to focus on one topic at the expense of other interests, and intact memory and visuo-spatial skills. The ‘artist’ syndrome fortunately remains rare, and mysterious in origin. Savants exhibit extraordinary visual talents along with profound linguistic and social impairment. The intense focus on and ability to remember visual detail contributes to the artistic product of the savant. The anatomical substrate for the savant syndrome may involve loss of function in the left temporal lobe with enhanced function of the posterior neocortex.

Aggression appears to have a pivotal place in Art, not in physical manifestation but as a sublimated instrument of creativity. Virginia Woolf’s image of ‘Killing the Angel in the House’ tracks the implications of gender, focusing on the concept of the ‘muse.’ Traditionally, the fear, guilt and anxiety associated with aggressive creativity has been mediated by the muse - a long held belief of an inner voice originally discussed by authors such as Plato and Aristotle. The presence of a muse can be internalised to infuse the relationships that constitute creativity.

Art allows adolescents to use alternative languages beyond illness, to engage in endeavours that are distanced from overt therapeutic intent and to embrace attributes of self-esteem and resilience. Through the process and production of art and the inclusion of music, poetry, film or theatre, young people can experience personal growth, acquire skills, develop socially and contribute to environmental change. In seeking to illustrate the value and importance of such approaches, art projects allows adolescents to pursue art for psychological development. More recently, the development of personal totem poles and an imaginative mosaic mural has powerfully engaged creativity in hospitalised or psychologically at-risk adolescents.

Not only do artists suffer for their art, but their fans do as well. It is now recognised that those who worship artists, especially celebrity artists, are recognised as suffering a form of parasocial obsession; an erotomanic delusional disorder, where cognitive deficits are common.

The mad scientist syndrome

‘The intellect often, alas, acts the cannibal amongst the other faculties and the rest of them scarcely have room to breathe.’

Virginia Woolf

When it comes to scientific research, presence of mind and clarity of perception are vital for sound science. That’s not to say that all scientists are psychologically normal. Isaac Newton, for example, suffered paranoid psychoses most of his life. Many of the great discoveries and developments in the sciences and the arts were made by people who were ‘mentally different.’ Unfortunately, other people’s appetites easily appear excessive when one doesn’t share them. Many scientific pioneers and innovators with such appetites or obsessions in science have experiences that are indistinguishable from the phenomena defined as mental illness (or madness). It has been postulated that such experiences are a necessary constituent of the creative process, and that this may apply to the sciences as much as to the arts. That’s not to say scientists are mad – what’s more likely is that the unscientific community may
The scientific literature details the logical reasoning processes required by the scientist to implement the rigours of research and theory development. It is not so much a matter of how they think (which amongst scientists is fairly ‘normal’) but the degree. Any scientist worth their salt will tell you that it takes a lifetime’s study to understand the apparently simple workings of a frog’s cardiovascular system, or the immune system of a dog’s skin. To a lay person, such an obsession is alien, and akin to madness. The only difference it seems is the fruits of their madness. Clinical insanity bears no fruit, whereas many scientific obsessions yield bushels of practical fruit. Gödel’s mania about unreal mathematical numbers, which lay persons couldn’t conceptualise by using their fingers, yielded knowledge that allowed orbital satellites to be launched into space. Bohr’s obsession with electron chambers yielded the cathode ray tube, giving us our modern camp-fire - the television - through which we witnessed the horrors of S11 and the frivolity of Sex and the City. One man’s obsession becomes another’s obsession. Science invents, and these inventions creates needs. Wheels of industry turn. Creativity leads to consumption. Lives are changed. This is a true, worthwhile and meaningful revolution of science in action. A revolution not in the way Americans use the word, to sell pantyhose.

In his seminal book Crazy Wisdom, Wes Nisker writes:

‘Crazy wisdom is the wisdom of the saint, the Zen master, the poet, the mad scientist, and the fool. Crazy wisdom sees that we live in a world of many illusions, that the emperor has no clothes, and that much of human belief and behaviour is ritualised nonsense. Crazy wisdom understands antimatter and Sufi poetry; loves paradox and puns and pie fights and laughing at politicians. Crazy wisdom flips the world upside down and backward until everything becomes perfectly clear.’

Much less attention has been focused on creative and critical thinking as modes for deriving explanations, inferences and conclusions essential to science as a product. Researchers should be aware of their philosophical assumptions and appraise the philosophical underpinnings of the methodologies, but this process should not restrict and limit their exploration of possibilities and the creativity in their efforts to address the growing challenges that await scientific research. Clinical creativity is no different. Creativity in meeting clients and patients’ needs is required daily by veterinary clinicians. Because of changes in the veterinary environment, practitioners must maintain the ability of divergent thinking to solve the health problems of patients. However, many vets whose work in clinical practice has become routine have lost the ability of creativity. Robert Frost spoke vehemently about creativity in his poem ‘About a road not taken,’ urging individuals to continually foster creativity. In veterinary education both in the undergraduate and post-graduate streams, creativity is essential and without it academic achievement is stifled.

As a novel approach to developing creativity and enhancing pre-clinical writing, observation, and reflection skills, medical students in the USA undertake an elective creative writing courses. Research on results of these courses have consistently shown student’s concerns about issues such as professional identity, understanding of medicine as a calling, physician privilege and power, humanising the teacher, the limits of medicine, death and dying, anticipating future challenges, and identification with the patient are written about in these classes. Students undertaking these creative writing courses indicated the importance of the course in deepening their professional development as future physicians.

Information as creative energy

Nurturing critical thinking skills in the classroom is considered an important educational activity. It is believed that critical thinking skills are transferable and that they can be applied in practice when appraising, evaluating and implementing research. That more vets than ever before have been judged academically knowledgeable in research has not guaranteed the transfer of such knowledge to practice. The successful development of critical thinking skills for academic purposes does not necessarily mean that these skills are used in practice in relation either to research or clinical decision-making. This suggests that the transferability of critical thinking skills is less than straightforward. Indeed, there has been little narrowing of the research-practice gap since students started to learn critical thinking for academic purposes.

If you’re like most people, you’d swear you do your most creative work under tight deadlines. However, when creativity is under the gun, it usually ends up getting killed. People who work under
time pressure on projects that required high levels of creativity only work if people feel they are ‘on a mission.’ High-pressure days that yield no creativity lack such focus - people feel like they are on a treadmill, forced to switch gears often. On low-pressure days that yield creativity, people feel like they are on an expedition, exploring ideas rather than just identifying problems. And on low-pressure days that yield no creative thinking, people work on autopilot, doing their jobs without engaging too deeply. Mood seems to have little to do with it. When recognition and rewards for performance are tangible, creativity is high regardless of people’s mood at the time. What seems to be critical is the mission and its perceived importance to individuals and the group.

Creative power can be seen as that aspect of ourselves which we effect upon ourselves and on others. When we speak of ‘self-empowerment,’ we may be talking about improving our education and thus career opportunities, or going to the gym and pumping iron, or developing interpersonal skills which make us a more effective communicator. Creativity, like any urge, can be a double-edged sword. We can use creativity for the betterment of ourselves and others or misuse it. Self-esteem, connecting with others in a group and making time for reflection are also essential ingredients for both personal and professional creativity. How much of our day is absorbed with solving problems, implementing changes, overcoming personal and professional challenges and finding new ways to do more with less is the best indicator of creativity at work. These are the methods many successful people use to their advantage in professional endeavours. However, creative skills can be encouraged through regular educational events, such as conferences which contribute to developing critical thinking in the practice environment. The research-practice gap will reduce only if research becomes part of practitioners’ ideology, which includes the art and science of clinical practise. Critical and creative thinking are prerequisites to narrowing the gap between research and practice. Teachers and practitioners continue to explore the ways of meeting together to appraise literature as a possible means of making use of their thinking and knowledge in clinical practice.

The origins of sex, serpents and symbols

‘We feel that even when all possible scientific questions have been answered, the problems of life remain completely untouched’

Wittgenstein

Sexuality and creativity are intimately connected. Prior to homo sapien society, all creative energies of the Neanderthal and Cro-magnon were focussed on hunting/gathering and reproduction. As humans evolved and developed the skills of cognitive abstraction, the nascent creative energies began to be redirected beyond the narrow confines of survival and reproduction. Sexual frustration, during times of pregnancy, led humans to redirect their unspent energies onto inanimate creations – wall paintings, adornment of clothing. The primal urge of hunger, which invented new ways of hunting, is eclipsed by a sexual urge to display, to stimulate the senses, to find physical release through the exhaustion of carvings, building idols to gods and chieftains. Young and restless males play in mock battles. Complex games are played and sports emerge, avoiding outright war. The macho aggressions of youth vented in creative rather than destructive ways. Only in the senescence of old age do the fires of passion begin subside, and even then the embers still burns. A society that stifles its creativity is doomed to suffer the terrible fate of conformity. And though there is nothing more restful than conformity, evolution is never so. We can never evolve socially without sex, but arguably our most rapid evolution came with its redirection of it into the sciences and art.

Sexuality is the fundamental cohesive force in all societies and is a major influence on social structure and institutions. A society which does not reproduce itself ceases to exist. Science has spent over a century trying to explain the evolution of sexual selection. It has explained many human abilities, such as food preferences and fear of snakes, but it consistently fails to explain other abilities for decorative art, moral virtue, and witty conversation. Both religion and sexual behaviour as cohesive forces have been, and increasingly will be, radically challenged by science, both at the societal level and at the level of the individual human being. An extreme view no doubt is that science and religion are totally incompatible and thus as science progresses, religion as an important cohesive force will simply disappear, with important consequences for many existing societies’ moralities.

Studying the history of humans has given us a deeper understanding of where we have come from, but not necessarily why. What human history does do is help purify society of residual taint of our forebears, especially regarding unwanted sexual attributes. As the Roman historian Livy points out:
The study of history is the best medicine for a sick mind; for in history you have a record of the infinite variety of human experience plainly set out for all to see; and in that record you can find for yourself and your country both examples and warnings; fine things to take as models, base things, rotten through and through, to avoid.

Fundamental to sexual selection in the animal kingdom is female choice since for most species the male displays strength, cleverness, and general genetic fitness in order to entice the female. With humans, there is a greater mutuality of choice. Many scientists argue that not only is sexual selection the source of the traits we tend to find the most endearingly human - qualities of character, talent, and demeanour—but that artistic creativity and enjoyment came into being in the process of women and men choosing sexual partners. The notion that we can alter ourselves through sexual selection is well accepted: there are striking examples of human sexual selection at work even in recent, historic times. The Wodaabe of Nigeria and Niger are beloved by travel photographers because of their geere wol festivals, where young men make themselves up, in ways that look feminine to Europeans and dance vigorously to display endurance and health. Women then choose their favourites, preferring the tallest men with the biggest eyes, whitest teeth, and straightest noses. Over generations, the Wodaabe have grown taller than neighbouring tribes, with whiter teeth, straighter noses, etc. If it is possible to observe this kind of change in a few centuries, it is clearly possible to remake or refine Homo sapiens in tens of thousands of generations. As with natural selection, just slight choice bias over long time periods could radically reform aspects of humanity, giving us species features of personality and character that we have in effect created for ourselves. Our ancestors exercised their tastes for ‘warm, witty, creative, intelligent, generous companions’ as mates and this shows itself both in the constitution of our present tastes and traits and in our tendency to create and appreciate art.

Alongside the evolution of creative art is a fascination with symbology of the snake. For thousands of years the snake was a symbol for the dynamic and regenerative energies of the creative life-force. And as such, it also became associated with sexuality. Snakes have been used for worship, magic potions and medicine, as well as a symbol of love, sex, health, disease, medicine, pharmacy, immortality, death and even wisdom. In the Sumer civilisation (2350-2150BC), designs with two snakes appeared. In Greek mythology (B.C. 2000-400), statues of Asclepius (God of Medicine), with ‘Caduceus’ (made of two snakes and a staff), and his daughter Hygeia (God of Health), holding a snake and bowl, were created as symbols for medicine and health, respectively. With the Caduceus we see a pair of snakes, representing the Male and Female polarity united. Significantly, this union takes place encircling the ‘Tree of Life,’ which traditionally united the three Worlds: the Underworld, the Earth and the Heavens. Given the interpretation of these individual symbols then, the Caduceus is almost self-explanatory: through the union of the Male and the Female polarity, that which was separated will be made whole and the harmony of the three Worlds will be restored. In mythology, the caduceus is completely internalised. The ascending feminine current of energy within the individual is called in Sanskrit the ‘Ida.’ It is perceived to rise from the base of the spine and into the head, where it unites with the masculine energy (‘Pingala’) in a state of rapture. At the base of the spine is the ‘Kundalini,’ depicted as a sleeping serpent, coiled deep within the cave of the pelvic floor. When the Ida and Pingala join, the serpent ‘Kundalini’ is said to uncoil and rise upward, leading to union with the God-head.

In the late twentieth century, religions have been increasingly accused of repression of sexually-related material in education and art. There appears to be a conflict between Christian ethics and secular experiences of sex, art and creativity. Until the mid-20th century, religious teachings that rejected the possibility of the goodness of sexual pleasure continued to characterise religious teachings. The negative teachings of the churches on sexuality as degrading has not resulted in a healthier view of the art of sex and the sex of art. Freud’s idea that civilised art began with the renunciation of the ‘homosexual competition’ of urinating on the fire only adds to the religious arguments of repression. Artists like Andy Warhol, who enjoyed ‘pissing’ on his Oxidation Paintings, ran contrary to social morality of his times and did not appear to have advanced society any closer to increasing awareness and permissiveness of sexuality and creativity.

However, it is not more pornography that society needs or more permissiveness, but an appreciation of sexuality’s intimate association with healthy psychological creativity. Suppressed, creativity can only lead to neurosis. Freud, always sexually reductionist in outlook, lent credence to this argument when he made his most polemic assertion that a repressed attitude on healthy sex is the mother of all neuroses.
“The fact that a grossly sexual, tender or inimical, transference occurs in every treatment of a neurosis, although this was neither desired nor induced by either party, has, for me, always seemed to be the most unshakeable proof that the forces of all neuroses originate in the sexual life.”
Contentment

‘Nothing that grieves us can be called little: by the eternal laws of proportion a child’s loss of a doll and a king’s loss of a crown are events of the same size.’

Mark Twain
Contentment is a state of emotional satisfaction with things as they are. A state of mind when we no longer have to shout to have ourselves heard, to bore others with what we think we know, to fight others for an academic position, to spend endless hours telling clients what they don’t need to know, while they wait restlessly to hear what they need to know. By analogy, we could think of it as being in a state of parasympathetic equanimity, where the ‘fight or flight’ instinct is sublimated.

We often think of contentment as something felt at retirement, that it is not a normal feeling for the upwardly mobile professional or the hectic practitioner trying to run a million-dollar practise. However, the primary attitude associated with contentment is of accepting the present moment rather than looking continually at the past or future to provide the feeling. Our western thinking makes us feel that we can only be content when we have achieved certain goals, be they a successful practise, getting married, having children, etc. The notion that contentment could possibly be felt on the road to success rather than at its destination is not normally considered. The anxiety of waiting is the emotional result of discontentment. It basically means that we prefer the future to the present moment. You don’t want what you’ve got, only what you might get or once had. This greatly reduces the quality of life by disenfranchising the present moment. ‘Now is not important – tomorrow is,’ leads to weakening our performance in what we are doing at present, and lacks the resonance of truly being in the moment. Many successful vets are successful in what they are doing right now, thinking only of the surgical case at hand, or the client they are consulting with, not whether they can increase the practise turnover to retire at a younger age. When we prosper in the present moment, future prosperity becomes inevitable.

Job satisfaction

As veterinarians, we have a lot to be thankful for. We have made major impacts not only on domestic animal health care but in protection of specific disease-free herds and flocks. We have developed preventive measures of vaccination and stock eradication in disease outbreak that protected many countries from enormous losses due to deadly diseases such as rinderpest, foot-and-mouth disease, African swine fever, hog cholera, Newcastle disease and myxomatosis. Millions of humans have also been protected against zoonotic diseases by the activities of veterinary services reducing and eliminating these diseases in animal populations. Additional health control was achieved in the trade of livestock globally. Foot-and-mouth disease (FMD), which in 1950 spread over almost the whole territory of Europe, South America, Asia and Africa. Europe and majority of other formerly affected continents, has reached FMD-free status. Other examples include the eradication of the New World screw worm in North and Central America as well as recently in Northern Africa (3 years after its introduction). In 1964 a huge wave of foot-and-mouth disease penetrating in Mongolia through the Gobi desert was blocked and liquidated with the help of international veterinary efforts. In the former Czech Republic, the elimination of bovine tuberculosis in 1968 represented a key boost for doubling meat and milk production and the eradication of widely spread Bovine Brucellosis in 1964 avoided new cases in human population. In Australia, alone, veterinarians have successfully eradicated brucellosis nationwide, hydatid disease in New Zealand and Tasmania, substantial eradicated tuberculosis from all but small regions of Australasia, and developed a commercial vaccine to prevent Q fever in humans.

Knowing our services are so invaluable doesn’t necessarily equate to feeling appreciated by the public. There is a lot we have done to prove to ourselves that we are important to humanity! We should congratulate the tireless efforts of so many veterinarians world-wide. Yet, despite our tireless...
That this is insufficient for professional satisfaction. They ask, ‘is this as good as it gets?’ Perhaps that dream of pursuing a PhD will never be realised (without making huge financial and marital sacrifices), or the dream of becoming a professional golfer, musician or writer, or that they’ll have to wait until retirement before they can sell the practise for a life on the road in a Winnebago. Is all that is left is to recite the mantra ‘I owe, I owe, it’s off to work I go,’ or is there another way of living life, or doing what has to be done in such a way as to be a meaningful or fulfilling life? If we consider our personality differences, it’s easy to compartmentalise our mentality and where we fit in the professional universe.

- **Narrow, deep interests**: A narrow, specific interest is pursued throughout a career. These veterinarians are likely to become academics.
- **Linear interest**: An interest in rising through the ranks of the management hierarchy. These veterinarians go on to run veterinary hospitals and veterinary schools.
- **Spiral interests**: A need to broaden a personal or professional sphere of influence. These veterinarians are often involved politically involved in policy and advocacy in the AVA and such groups.
- **Transitory Interests**: The need for a change every two to three years. These veterinarians often become consultants and entrepreneurs.

Although it has been observed that duration of employment and job satisfaction are positively correlated, many studies have suggested that what is measured by job satisfaction is really a lack of job dissatisfaction and that the promotion of job satisfaction essentially relies on the removal of environmental deficiencies in the workplace. It has been therefore commented that ‘feeling good about your job is not entirely the same as not feeling bad about it; in its full sense psychological well-being at work is a question of satisfaction-plus’.

Work, especially in men, is one of the central activities in their life, a source of satisfaction and dissatisfaction, the basis of identity and a main object of motivation; it can also be the cause of physical or mental ill health. The aspects of work which affect well being include the type of work, job status, competition, our role in the work group, supervision, and role conflict. Although it is up to an individual to find satisfaction in their work, over the past twenty years many programmes have been instigated to reduce job dissatisfaction such as stress management, courses in conflict resolution and anger management, and addressing unhealthy behaviour including obesity, smoking, excessive alcohol consumption, drug abuse, and lack of exercise. Thus, in a broader sense, work-site intervention programmes aimed at smoking cessation, weight loss, problem drinking, drug abuse, and increasing employee fitness have had a significant role in reducing job dissatisfaction. Stress management at the workplace with the aims of improving mood, concentration, work performance and general well-being is recommended by most governmental bodies.

Ultimately, our goal in becoming a vet was either to provide happiness for others (animals and/or people) or happiness for ourselves (financial, intellectual, spiritual, etc). The premise of what constitutes ‘happiness’ is a personal one, and different for everyone. One person may define happiness as being rich, happily married and professionally successful while someone else may define being happy as staying out of prison. Unfortunately, the absence of difficulties and problems does not equate with happiness. Positive emotions do. To know what doesn’t make us happy will not necessarily make us happy, though it is the first step. This leads us to then ask what is it that could give us lasting and meaningful pleasure in life? Such a profound question leaves some people staring into a void of emptiness. Maybe it is living a virtuous life, having money, a beautiful wife, great kids, a villa on the beach or yearly holidays to Aspen. When we identify an inner need that is not being met, we adopt behaviour that directs us toward gratifying it. Finding satisfaction in a job where we can achieve specified goals, recognition, enjoyable work, responsibilities and career advancement are all increments which can lead to career satisfaction. Job dissatisfaction factors are usually associated with the work environment and include pay, working conditions, supervision, company policy, and interpersonal relationships.

After studying many years at university and developing a social status which comes with that knowledge, veterinarians are placed immediately at a social position above the norm. Whether we are aware of it or not we are automatically assumed to be in a superior social position even if this elevation is not realised financially or by respect. And after many years of being treated by the general public as somewhat of a superior human, it is not surprising that we absorb some of this pride. Fortunately, due to our financial rewards as professionals we can immunise ourselves from poverty and the attendant
problems of physical and mental stress. Education protects us from menial work, meaningless recreation, and misdemeanours of physical and mental abuse. A secondary effect of education is that it unwittingly produces a social distance from the less educated. The downside of this is that the greater the social distance between two people, the less sensitivity either is likely to have toward the other's problems. Being educated therefore doesn't imply we have to be hard headed or hard hearted to the needs of the less fortunate.

The health professions are driven by scientific knowledge and reason above all else. The function of compassion, once a religious concept, is now transformed into 'caring' by the medical profession, with the prime motivation being not from a religious standpoint but for reasons of professional ethics. This in itself does not disenfranchise the intention of health professionals, but it does negate from the inner drive of an individual who is less motivated from attempting to better oneself morally than it is to better the profession as a whole. Consequently, though the profession as a whole benefits, the individual must necessarily sublimate his inner needs for 'meaning' over the need of the profession as a whole. 492

Although we can spend a good deal of time in pursuing answers to these fundamental questions, it is unlikely that at the end of it we will find the meaning of life. Considering the many thousands of human hours which have been spent on the pursuit of the meaning of life, resulting in many philosophical theories, endless religions, cults and ideologies, it seems logical to be content instead with simply finding meaning in our own life. We can find answers that satisfy our inner needs at an emotional, moral or spiritual level but at some point there will remain unanswered questions which we must inevitably put down to faith, God or Nature. Whatever satisfies our intellectual mind it must also accommodate our needs at an emotional level. And it is at an emotional level that contentment with ourselves, our abilities as a professional, and where we fit in society can be explored, modified and hopefully deepened to provide deeper satisfaction.

We define who we are on a personal level in relation to our emotions, beliefs, traditions, habits, social status, money, power, and our relationships with lovers, friends, family and community. If these things define 'us,' what then happens when we lose our spouse through death or divorce, if we suddenly find ourselves bankrupt or disabled? Does that mean we are no longer of any worth? Although many people consider bankruptcy, divorce, disability or a myriad other disasters as things to be avoided at all costs and insured against, life comes with no guarantees. Despite the best intentions and duty of care, tragedies occur on a daily basis. Fortunately for the majority of us, such tragedies are avoided by caution or chance. But quite often it is when life suddenly goes wrong that we face our own mortality, insecurities and fears and it is at these times that we often find ourselves asking some fairly difficult and often unanswerable questions. 493

Although this is not intended as a book to deal with life crises, it might be worth bearing in mind that if an unexpected or unthinkable misfortune has occurred to, no matter how devastating, rest assured that many millions of people have faced such a crisis before and will do so in the future, often with much calm and equanimity. For many people, they have found that this unwanted disaster, rather than lessening their quality of life, lead to a far deeper appreciation of what they possessed, especially relationships. 494

Who we are as a person must be something more than external measurements. How do you label yourself; a vet, a spouse, a parent? Are these labels worthy of the test of time, or indeed do other people see the same image of you as the one you project? When was the last time we examined the image we portray to our spouse, our clients, the person on the street? And is our image affected by what we wear, how we talk, our body language? If our image could be solely influenced by our appearance, then every smartly dressed businessman or woman is therefore a successful and trustworthy person. We do not have to look far to see how often appearances can be deceiving. Certainly looking the part is an important aspect of being a professional, but is it enough to allow us to deal effectively with people, to cope with life's difficulties and retain a degree of sanity in a stressful occupation? Appearances are just the outer dressing, or the beginning of being a complete professional. There are many stages of successfully integrating personality traits to becoming a successful professional and looking the part is just one of them. The definition of who you are transcends all external things. You are more than the smart, lab-coated professional, more than someone who has certain religious beliefs or none, more than your race, your sex, bank balance, car, house, spouse – but then who or what are you?

Who we are is usually defined by attributes from within: our thoughts, feelings, attitudes, beliefs,
personality and from without: through a career, an address, a marital status, a religion, a family (partner, children), a specific role in life, an education level, and a position in society. I am often reminded of the words of Neale Donald Walsch in *Conversations with God*, where he says that ‘we have to either go within or go without.’ It seems that understanding who we are as a person is essential to beginning to understand where we belong, what sort of occupation is best suited to our temperament and the inner areas which arise as challenges and those which can be seen as our gifts. Though it has been said many times in lecture courses that being a veterinarian takes in the order of eighty years to perfect, most veterinarians attain a high level of competency and have seen 75-80% of most common clinical presentations within the first five years after graduation. Clinical competency, measured as the degree of clinical accuracy in diagnosis and treatment of disease, is just one aspect of being a successful practitioner. Experience is essential to dealing with the myriad of clinical cases, as well as interpersonal and personal crises.

Being a health care professional can be a tremendously rewarding occupation. Though fraught with stress, it is a source of pleasure derived from helping sick animals and directly contributing to the joy of their owners/ guardians. However, there is no work which is free of routine. Though many veterinarians are excited by the diagnosis and treatment of rare diseases, most still have to spend the majority of their time spaying, vaccinating and doing health checks. This does not mean that doing a monotonous job is a source of job satisfaction, but merely that there is no work which involves constant newness or excitement. Any artist will tell you that painting a beautiful and breathtaking landscape, or writing a best selling novel, is by and large a tedious job entailing 90% repetitive or mundane work. Even the most accomplished cardiologist has spent years perfecting the surgical skills and manual dexterity required for completing such a procedure. Thus it could seems that the test of a vocation is the love of the drudgery it involves. But the mundane nature of work can also be in itself a salvation. It seems likely that if we are unable to find enjoyment from administering a vaccination, we will be unable ultimately to find it in more complex procedures.

Thich Nhat Hanh, in his book *The Art of Mindfulness*, describes two ways of doing a routine procedure; one where we are focussed on what we are doing, and one where we are focussed on what happened before it or what is going to happen afterwards. For example, if we are doing a vaccination and are thinking about a difficult laparotomy awaiting us at the end of the consultation it is likely that being so distracted the vaccination will be rushed, the client will sense this urgency or distractedness and the job will not be as effective as it could be. Similarly if we have just been talking to an irate client on the telephone, it doesn’t help to nurture this ire whilst in the middle of surgery. Worrying about what has happened or what will happen is like being on a rocking chair - there is a lot of movement but little progress. Deal with each job in a focussed way, maximising your effectiveness and efficiency in each moment of action.

In the same vein, it is also disadvantageous to colour your present work with past fears, anger, etc. Bearing a grudge about a previous patient or client will merely affect your treatment of your present patient or client. Before the advent of disinfectants in the 1800s and Jenner’s pioneering work with microbes, a doctor would proudly wear a surgical gown covered with blood or pus and quite often the more soiled the lab coat, the more dignified the surgeon was considered by his peers (though not his patients!). Though we would cringe at approaching modern surgery without sterility, we seem to not apply equal diligence with sterilising or disinfecting ourselves at the end of each case we deal with. It seems logical then to metaphorically wash your hands after each case, treatment or consultation before moving onto the next case, thus avoiding or limiting infecting the next procedure with residue emotions.

Fortunately, the vast majority of us don’t need to learn about the technique of cleaning ourselves emotionally. Remaining objective in the face of emotional issues is something which comes second nature and it is only when we are dealing with difficult clients or patients or acute personal problems that our objectivity goes out the window. It is especially important at such times that we have a mechanism in process which allows us to cleanse ourself of unwanted emotional baggage. This process of cleansing our mind or releasing ourselves from the weight of emotional burdens takes practise. Diligence is required to maintain equilibrium and composure in difficult circumstances.

Having a sanctuary where we can retreat to on a weekend is also a wonderful thing, but it is only of use when we are at the week’s end, not at the beginning of it or the middle. Running from a problem or avoiding it or dulling it through medication or alcohol does not really address the problem. It merely pushes it aside and will require even more effort to conquer when later faced. Taking a
moment to calm one’s mind is quite often sufficient to regain equanimity on a problem. Obviously this works well on small problems such as a client arguing over a bill, but is a shallow fix for dealing with a death in the family or a marital breakdown or a difficult employer who is giving you grief on a daily basis. Finding peace of mind in larger life issues requires even more profound efforts to overcome and retain meaning in one’s life.

Beyond the prudent use of wise counsel (family/friends), there are also practical ways of finding peace of mind in a stressful environment. For some, such peace comes through sharing with family and loved ones, use of meditation or having a deep and abiding faith in religion, while for others, strenuous physical exercise or an artistic pursuit are all capable of bringing everything back into perspective. Whatever the method you use, if such outlet brings deeper contentment and a feeling of connectivity with those around you, then the fruits of these endeavours can only be encouraged. If however, you find yourself more and more emotionally isolated from work colleagues, friends and loved ones, then a serious search within is in order to clear the problem.

However, we must remember that we aren’t trying to be completely detached from our feelings. It is our feelings of connection with loved ones which helps us from ‘losing the plot’ during stressful times, and psychological discord usually only occurs when we are unable to be with loved ones or lose touch with them emotionally through our own isolation. The philosopher William James once remarked on the pursuit of contentment:

‘Conceive yourself, if possible, suddenly stripped of all the emotion with which your world now inspires you, and try to imagine it as it exists, purely by itself, without your favourable or unfavourable, hopeful or apprehensive comment. It would be almost impossible for you to realise such a condition of negativity and deadness. No one portion of the universe would then have any importance beyond another; and the whole collection of its things and series of its events would be without significance, character, expression or perspective.

Though it is often said that love is a risk and ultimate love the ultimate risk, this has within it the inherent flaw that love is conditional. True love, such as is expressed altruistically by a mother for a child, is the ultimate example of unconditional love. It is a giving of care, nurturing and sustenance without any expectation of return. Such altruism is hard to portray in every facet of life, and indeed would only be expected from a saint. For the majority of us, the expression of love is diluted as we move from intimate companion or lover to that expressed to a friend, an acquaintance and least of all, a stranger.

We instinctively understand the nature of change, how we mature psychologically during our life and with it we nurture the wisdom that ultimately there is no such thing as a sure thing. Knowing that all of us have a limited time on this planet helps us to embrace what we have. In much the same way that a cut rose’s will last just a day, so is all life’s beauty made more precious when we understand the temporal nature of its existence. David White, a North American physician wrote *The Heart Aroused*, an exploration of ways for professionals to take their souls to work, instead of checking them at the door. ‘We simply spend too much time and have too much psychic and emotional energy invested in the workplace for us to declare it a spiritual desert bereft of life-giving water.’ White describes the soul as ‘a measure of our belonging in the world. When there is little sense of belonging, there is very little sense of soul.’ In the workplace, he thinks about whether ‘people have a sense of belonging to the particular work or the organization.’ He talks about life in the upper world of the workplace and life in the dark subterranean caves where the soul lives. ‘The soul is where people’s true creativity and imagination resides ... and by inviting it into the workplace, organisations and employees can become more successful, innovative, and adaptable.’ In corporate settings, he uses poetry to bring an understanding of the process of change, helping clients to understand individual and organisational creativity to transform the workplace. ‘The poetry can teach and touch those places that the corporate language cannot speak to.’ White presents several ideas to help physicians preserve their souls in an increasingly corporatised health care system: (1) Figure out what you are meant to do as your life’s calling; (2) know what you think and want; (3) share some of what you think at work, while being careful to not lose your job unless you choose to; (4) be a trustworthy listener and find one; (5) get yourself outside; (6) pay attention to your physical space; and (7) develop some new hobbies or refresh old ones.497

One of the disciplines of building a rich soul life seems to be the simple act, on a daily basis, of remembering what is most important to us. The competence of a veterinary practitioner does not
consist solely of professional knowledge and practical skills; it consists to a large extent of personal (intuition and creativity based on personal experience) and communicative elements, both of which are necessary in managing the unpredictable complexity of general practice. Such competence is difficult to develop outside the practice. By sharing the experience of actual consultations with experienced colleagues, and reflecting upon this experience within a small group, general practitioners will probably develop better professional judgement and increased awareness of their learning needs, as well as of their limitations and potential.

Reawakening your passion for work

Identifying unrelieved stress and being aware of its effect on our lives is not sufficient for reducing its harmful effects. Just as there are many sources of stress, there are many possibilities for its management. However, all require work toward change: changing the source of stress and/or changing your reaction to it. How do you proceed? Here are some pointers:

- **Become aware of fixed and mutable self-states** - Observe your stressors and your emotional and physical reactions. Notice your distress. Don’t ignore it. Don’t gloss over your problems. Determine what events distress you. What are you telling yourself about the meaning of these events? Determine how your body responds to the stress. Do you become nervous or physically upset? If so, in what specific ways? Then once you are more aware of them, begin to;

- **Differentiate between fixed and mutable self-states** - Recognise what you can change. Can you change your stressors by avoiding or eliminating them completely? Can you reduce their intensity (manage them over a period of time instead of on a daily or weekly basis)? Can you shorten your exposure to stress (take a break, leave the physical premises)? Can you devote the time and energy necessary to making a change (goal setting, time management techniques, and delayed gratification strategies may be helpful here)?

- **Reduce the mutable states** – Practise at reducing the intensity of your emotional reactions to stress. The stress reaction is triggered by your perception of danger... physical danger and/or emotional danger. Are you viewing your stressors in exaggerated terms and/or taking a difficult situation and making it a disaster? Are you expecting to please everyone? Are you overreacting and viewing things as absolutely critical and urgent? Do you feel you must always prevail in every situation? Work at adopting more moderate views; try to see the stress as something you can cope with rather than something that overpowers you. Try to temper your excess emotions. Put the situation in perspective. Do not labour on the negative aspects and the ‘what ifs.’ Learn to moderate your physical reactions to stress. Slow, deep breathing will bring your heart rate and respiration back to normal. Relaxation techniques can reduce muscle tension. Electronic biofeedback can help you gain voluntary control over such things as muscle tension, heart rate, and blood pressure. Medications, when prescribed by a physician, can help in the short term in moderating your physical reactions. However, they alone are not the answer. Learning to moderate these reactions on your own is a preferable long-term solution.

- **Build mutability reserves** - Build your physical reserves. Exercise for cardiovascular fitness three to four times a week (moderate, prolonged rhythmic exercise is best, such as walking, swimming, cycling, or jogging). Eat well-balanced, nutritious meals. Maintain your ideal weight. Avoid nicotine, excessive caffeine, and other stimulants. Mix leisure with work. Take breaks and get away when you can. Get enough sleep. Be as consistent with your sleep schedule as possible. Maintain your emotional reserves by developing some mutually supportive friendships/relationships. Pursue realistic goals which are meaningful to you, rather than goals others have for you that you do not share. Expect frustration, failure, and sorrows as a part of life, not things to be avoided. A Samuel Smiles once said, ‘He who never made a mistake never made a discovery.’
Sky above the clouds

*That which is at variance with itself agrees with itself,*

*like that of the bow of the harp. From things that differ comes the fairest attunement.*

Heraclitus

Showing signs of stress does not mean you are a weak individual who can’t cope. It merely means you are human like everyone else. People react differently to the situations they have to face because they are all unique individuals. Some may be very passive personalities whilst others may be very competitive. Their life experiences will vary enormously as will their overall conditioning. Their state of health will also vary - it is far more difficult coping with the pressures of everyday life when one is feeling unwell. Life today is very different to that of only a few years ago. It is very time-pressured and competitive. Technology is changing daily. Sadly marriage/partnership breakdowns are becoming very common and long-term job security seems, for many, to be something of the past. It is hardly surprising that at times people feel they just can’t cope. But reaffirming our position in society, as important member of a family, of a group of friends and in a profession are as important as oxygen in keeping us alive.

When we take more responsibility for our own life, we take more of the good qualities that we have into use, and we become more free, powerful, happy, and healthy. As most people with chronic diseases have learnt, understanding that some things won’t go away, and developing life skills which help them live a more noble path of personal development is far more successful. Improving life really lies in acknowledging that our lust for life and a wish to contribute in meaningful ways to society are one and the same, regardless of our social position or physical condition. The inner journey confirms this. Psychological recovery in chronic disease is about recovering self-esteem, self-worth, pride, choice, dignity and meaning. It is about the whole person, not just a disease. It involves identifying their strengths, instilling hope, and helping them to function at an optimal level by allowing them to take responsibility for their life.

Illness is part of life and hence always has a place in a life history. All that went on before the time of the illness, how life was in the past and what hopes and dreams were interrupted and changed, all influence the experiences of illness. Chronic sufferers of illness have a unique perspective of reality. They experience the body as a hindrance, often feel alone in illness, and struggle for normality. Many hover between an escape from the emotional suffering pain of illness and the emotionless state of enduring. Serious chronic illness means living a life that is hovering between enduring and suffering but also including the process of reformulation of the self. Emotional turning points for most sufferers include ‘emotionally compelling experiences’, a realisations of belonging, doing, or understanding the self and its place in the world. The major protective factors were social support, traits such as perseverance and determination, and spiritual beliefs. Psychological protective processes to overcoming chronic illness include replacing a loss with a gain (transcending), recognising new things about oneself (self-understanding), and making decisions about relinquishing something in life (accommodating). These protective factors, processes, and ways in which people with disabilities draw sense and meaning in life have important implications for service delivery.

An example of how people cope and adapt to chronic disease is seen in sufferers of osteogenesis imperfecta (OI). Sufferers of OI show a classic stereotype of high intelligence and an euphoric personality. Such people are frequently more bright, talkative, articulate, ‘up’ emotionally, and accomplished. Those with OI describe their life experiences and difficult medical and social challenges as directly contributing to the development of these personality attributes. The concept of personality ‘resilience’ is the best method of explaining these sufferers’ coping mechanism. Another example is in sufferers of Multiple Sclerosis (MS). In this disease, fatigue is an all consuming phenomenon, involving the body and psyche. Fatigue is expressed in terms of energy loss, emotional afflictions, dependency and restrictions of life in general, however, it is also constructively perceived and involves a desire to accept life and strive for a better situation. Psycho-spiritual well being is an area of interest to researchers all over the world. Six major themes are believed to be essential for psycho-spiritual well being including self-awareness, coping and adjusting effectively with stress, relationships and connectedness with others, sense of faith, sense of empowerment and confidence, and living with meaning and hope. Patients with an enhanced sense of psycho-spiritual well being are able to cope more effectively with the process of terminal illness and find meaning in the experience. Prognostic awareness, family and social support, autonomy, hope and meaning in life all contribute to positive
psycho-spiritual well being. Emotional distress, anxiety, helplessness, hopelessness and fear of death all detract from psycho-spiritual well being.

The importance of ‘hope’ (faith) in determining the well being of cancer sufferers has been recognised. Stressful events such as pain and disease metastasis have a direct impact on patients’ hope levels. The patients’ disease stage does not affect their level of hope, nor does their degree of pain. Mostly, the level of hope is directly correlated with treatment outcome. For those with pain, the cognitive dimension of pain (meaning ascribed to pain) directly influences levels of hope, whereas sensory dimensions (pain intensity and relief) showed no such correlation.

The ageing process is another facet of psychology that most people ignore until it is upon them. For most people, getting old is a greater fear than being old. It is fascinating that the majorities of elderly people are not overwhelmed with worries and manage their lives, coping adequately with the problems of day-to-day living. Findings show that middle-aged people indicate the highest worry scores. The findings further show that the post-retirement group has the highest scores on sense of coherence.

Recent trends in social research indicate a decline in church attendance and a corresponding increased interest in spirituality. With the aging of the population, attention to end of life care, with its corresponding spiritual concerns and distress, has become a prominent issue. Spiritual distress can be difficult to distinguish from psychological and physical distress and indicates the need for differential diagnostic markers to distinguish between genuine spiritual experience and psychosis related to the physical death process. Additionally, hospitalised patients are in genuine need of palliative care and the question of when and how to medicate becomes paramount as the distinction between spiritual process and psychosis becomes less evident. When the women were depressed, they viewed aloneness as being vulnerable, fearful, helpless, and as having a loss of control of self and identity confusion. As the women progressed in their recovery from depression, they viewed aloneness as being self-reliant, hopeful, and resourceful and as having self-determination and self-reflection.

Recent findings suggest that if people engage in healthy behaviours and thoughts in their middle years, they will experience a vital, satisfying life in their 70s and beyond. Recommendations given for middle age people that are likely to prevent disease-related disability, cognitive impairment, and late life depression include;

- regular physical exercise, engaging in cognitively stimulating activities, maintaining an optimistic mental outlook, and finding meaning in life. The good news for the Baby Boomers is that there is increasing evidence that their behaviour at fifty will impact how they feel at eighty.

Spiritual well being offers some protection against end-of-life despair in those for whom death is imminent. Older adults who derive a sense of meaning in life from religion tend to have higher levels of life satisfaction, self-esteem, and optimism. Spirituality could be defined as attributing a meaning to life. ‘Spiritual pain’ can thus be defined as any psychological stress that threatens our established definitions of our understanding of life. In a stressful profession such as veterinary science, we need a strong sense of meaning of and connection with life, in order to be able to deal with the stresses of clinical life. Such a connection is threatened by any major break/interruption with normal routines or relationships. Challenges of job loss, relationship difficulties and unresolved inner conflict result in psychological disconnection that can often manifest as physical pain. This pain is a subjective phenomenon that varies with each individual, depending on their ‘coping’ mechanisms and their interconnectedness with others.

**Meditation as a clinical tool**

*What binds the fool, liberates the wise*

_Hindu saying_

Silence and solitude are compelling instruments of transformation granting us moments of perfect opportunity to look deeply inside. It offers us an oasis where we can replenish our stores of faith, courage, creativity and assimilate what we have learnt or are learning. Yet surprisingly many people are afraid of silence and of being alone. This speaks volumes about the way our society shuns our inner life. It is here, in these moments that we are within that we learn to recognise what we are without; what is missing, what is lacking, what is overdone, what is overemphasised. It can be scary to go within, and that’s probably why so many people can’t sit still long enough. They feel overwhelmed by their monkey
mind, and feel that there are no spaces in its constant chatter. But in states of relaxation there is increased awareness, mental clarity and peacefulness. By focussing on the spaces between our thoughts, what emerges is not emptiness but a vista of potentiality for respite, recognition, renewal and response. Even five minutes of meditative ‘quiet time’ a day show significant physiological and psychological benefits. Meditation provides a way to center yourself and is particularly helpful during stressful times. It increases your chances of not worrying and improves your ability to concentrate. More than a third of medical schools in USA and in one Australian university (Monash), include alternative/complementary courses which include meditation as part of their curriculum.

The three essential types of meditation are, in increasing order of complexity:

- **Concentration meditation** - focussing on one image to the exclusion of all other thoughts (seeing)
- **Visualisation meditation** - focusing on one image and its accompanying emotion to the exclusion of all other thoughts (seeing the clouds)
- **Analytical meditation** - focusing on an image to the exclusion of its emotions (seeing through the clouds)

Meditation is a common method used in stress and anxiety reduction. In its most pragmatic application one can firstly focus the mind on a simple image such as the rhythmic movement of air associated with the breath. Once the mind is stable, one can then look at a particular problem in all its entirety, images as well as emotions. Once this has been stabilised in the mind, one can then remove the clouds of emotional engagement to see a problem clearly for what it is. Meditation is easy to do in a clinical setting. It is not a procedure requiring a meditation hall, soft music and some Tibetan guru in front of us to do. It can be done while speying a cat, or driving to a farm. It merely requires focussing one’s thoughts continually back to a reference point, usually the breath. It has the effect of creating a sublime calmness which transcends normal relaxation techniques such as reading, watching TV or sunbaking. Concentration meditation is used to develop the skill or regulating the activity of the mind, in particular the flow of conscious thoughts. Ultimately, it allows the practitioner to develop a heightened state of mindless awareness. Visualisation meditation involves creating a mental image with its accompanying emotions (e.g. a loved one or an enemy). This allows the practitioner to begin regulating or controlling their emotions toward that image in a more balanced way. The final type of meditation is the analytical sort which involves analysing a particular problem by firstly removing all extraneous thoughts (through concentration) and emotions (through visualisation) in order to see the problem clearly and thus find a resolution to it. This is the basis for emotional clarity and is used successful in overcoming trauma, abuse, emotional disorders, etc.

Most forms of rigorous meditation are characterised by reductions in cortisone and adrenaline production and longevity in most users. The altered states which are achieved are cognitively defined as having an absence of sensations about time, space or body sense. Physiologically, this state is distinguished by the presence of apneustic breathing, autonomic orienting at the onset of breath changes, and increases in the frequency of peak EEG power. Statistically significant decreases in medical and psychological symptoms and improvement in self-esteem were found. Many program completers reported dramatic changes in attitudes, beliefs, habits, and behaviours. Meditation as a psychotherapeutic tool has been investigated in many diseases. In people afflicted with HIV, meditation has a positive effect on stress-management, anxiety levels, mood, self-esteem, and T-cell count, which lasts for up to one month post-cessation. In chronic pain patients, statistically significant reductions are observed in measures of present-moment pain, negative body image, inhibition of activity by pain, reduced symptoms, mood disturbance, anxiety, blood pressure and depression. Pain-related drug utilisation decreases and activity levels and feelings of self-esteem increase. Such improvements appear independent of gender, source of referral, and type of pain. At follow-up, the improvements are maintained up to 15 months post-meditation training for all measures except present-moment pain. The majority of subjects reported continued high compliance with the meditation practice as part of their daily lives. Meditation, however, doesn’t appear suitable for everyone. People who have high suggestibility, introversion or neuroticism usually stop meditating in situations of severe chronic illness. Gender, expectations, credibility, locus of control and self-esteem appear to not effect individual use of this treatment modality. For the remaining majority, it has been an invaluable tool for reducing stress and enhancing effectiveness in clinical life.
extreme physical pain, and other elements. Many cultures have used for this purpose botanical materials containing psychedelic alkaloids. The most famous examples of these plants are several varieties of hemp, ‘magic’ mushrooms, the Mexican cactus peyote, South American and Caribbean snuffs, the African shrub eboga, and the Amazonian jungle liana Banisteriopsis caapi, the source of yagé or ayahuasca. Among psychedelic materials of animal origins are the secretions of the skin of certain toads and the flesh of the Pacific fish Kyphosus fuscus. Additional important triggers of meditative experiences are various forms of systematic spiritual practice involving meditation, concentration, breathing, and movement exercises, that are used in different systems of yoga, Vipassana or Zen Buddhism, Tibetan Vajrayana, Taoism, Christian mysticism, Sufism, or Cabbala. Other techniques were used in the ancient mysteries of death and rebirth, such as the Egyptian temple initiations of Isis and Osiris and the Greek Bacchanalia, rites of Attis and Adonis, and the Eleusinian mysteries. The specifics of the procedures involved in these secret rites have remained for the most part unknown, although it is likely that psychedelic preparations played an important part in them.

Since modern psychiatry does not differentiate between mystical or spiritual states and mental diseases, people experiencing these states are often labelled psychotic, are hospitalised, and receive routine suppressive psychopharmacological treatment. Western psychiatry and psychology do not see meditative states (with the exception of dreams that are not recurrent or frightening) as potential sources of valuable information about the human psyche and of healing, but as pathological phenomena. Traditional medical clinicians tend to use pathological labels and suppressive medication whenever these states occur spontaneously. These states are, however, are more likely to be psychospiritual crises or ‘spiritual emergencies.’ Properly supported and treated, they can result in emotional and psychosomatic healing, positive personality transformation and consciousness evolution.

I have found it helpful sometimes to comprehend the ineffable by relying on words of greater people. Einstein grapples the bigger problem of finding meaning thus:

‘Does there truly exist an insuperable contradiction between religion and science? Can religion be superseded by science? The individual feels the futility of human desires and aims and the sublimity and marvellous order which reveal themselves both in nature and in the world of thought. Individual existence impresses him as a sort of prison and he wants to experience the universe as a single significant whole. Science can only ascertain what is, but not what should be, and outside of its domain value judgements of all kinds remain necessary. Religion, on the other hand, deals only with evaluations of human thought and action: it cannot justifiably speak of facts and relationships between facts. On the relation of religion and science.’

A time to rage, a time to retire

Grief is a natural and normal human response. Grief comes as a result of death, loss or change. We grieve when someone dies, when we lose a job, when we give up school to go to university, when we get married and say goodbye to our single life, when we have children, lose our youthfulness and when we retire. But it doesn’t always mean tears and pain. Grief comes from the Latin gravis meaning ‘heavy’ or ‘burdened’. Overcoming grief is about relinquishing the heavy load and moving on. Grief expresses itself physically and psychologically. There is even evidence which shows that our tears of sadness are chemically different to those shed during joy. Grief has its own agenda. You can’t make it happen any faster. Some descend into it immediately while others go numb, before inevitably facing their loss. Ritual can be a tremendous help in such times. Going through the customs that initiate loss, such as graduation ceremonies at the end of university, or retirement parties help bring closure to such rites of passage. But if something has ended, it is only, as T. S. Eliot remarked, ‘the end where we start from’.

Getting old is not so bad, when you consider the alternative. When the time comes to gracefully exit the stage of veterinary life, what emerges is not only relief that finally we are able to stop working, but also a need to redefine ourselves. Elderly people tend to worry less about being old than young people who seem to be worried about getting old. Younger people’s fears of being old and poor or sick or being abused at the bus stop seem to diminish at retirement. This is primarily due to less concern or need for peer-performance, social standing, financial concerns and sexual performance. Since worrying only hastens the ageing process, it stands to reason that young folk should not worry about getting old. A number of categories of meaning have been sought by many retiring professionals to help them adapt to retirement. These include:
understanding the legitimacy of retirement
appreciating the temporal value of education vs. wisdom
appreciating ageing and death as a normal part of life
maintaining human bonds as a stabiliser of changing personal reality
accepting religion/spirituality to deepen meaning at death
affirming cultural and family traditions for stability of mind

The modern conception of what is meant by ‘society’ originated during the Enlightenment era. It implied the subjection of the individual to the general will of society. Older people however, want to maintain or re-establish a direct social relationship upon retiring, despite feeling they are not directly contributing to society through work, charity, domestic duties, etc. At retirement, many individuals experience an ego crisis, leaving them feeling useless. This is particularly important regarding companies who reduce the age of retirement. Many individuals, especially men, come out of retirement or are only part-retired because of their ability to still contribute to society well into their seventies.

Retirement is inevitable for all of us and reassessment of life’s priorities must occur. Many individuals, who postpone their pleasures until retirement find their dream of playing golf all day unfulfilling. This is not the way to maximise meaning either before or after retirement. The Roman stoic philosopher Seneca said that living the most of each day especially towards retirement age is critical for satisfactory life fulfilment. He remarked in AD65, long before the advent of consumerism, that:

“They spend life in making ready to live! They form their purposes with a view to the distant future; yet postponement is the greatest waste of life; it deprives them of each day as it comes, it snatches from them the present by promising something hereafter. The greatest hindrance to living is expectancy, which depends upon tomorrow and wastes today.”

Euthanasia: painless death vs painless life
‘Using cure as the only measure of success sends the message to patients that death is a failure, that they are no longer as valuable or important once a cure is not possible.’

It is an interesting observation that in opera, theatre and literature the ‘best’ deaths are supposedly those of brave fighters who kill themselves to avoid capture and degradation, the suicide of lovers because they have, or believe they have, lost their beloved ones, the suicide ordered by rulers and self sacrifice for a just cause. However, it’s arguable whether any of us would want such a noble death. For most people, dying from disease, accidents or old age is the norm. Accepting such a death is a natural part of life and allows the normal healing process surrounding grief to occur in the survivors, and for the dying patient to find peace in their last moments. If a guardian is able to rationalise what happens to their pet at the time of its death, they are then able to deal with the emotions which surrounds the dying process.

Euthanasia, or the act of killing something painlessly to relieve suffering, hinges on the definition of ‘a life not worth living.’ For veterinarians, euthanasia of animals is usually curtailed by the boundaries of chronic disease, terminal illness, the termination of pregnancy and killing feral or unwanted animals. We must also add to this the special category of killing animals for food, whether by captive bolt or electrocution at an abattoir or through condoning Halal slaughter under Muslim law. Veterinarians have to make a decision to euthanase based from an anthropomorphic perspective. We perceive that if we were that animal, we would not want such a life continued, or that such a life would entail such suffering as to constitute such poor quality of life as to be unworthy of being continued.

Euthanasia in humans

While alive be a dead man, thoroughly dead;
And act as you will, and all is good’
Bunan, 17th century Zen Master

Debates on the issue of euthanasia are rarely intellectual, having as they do serious investment in personal emotions. One of the more lucid proponents in the discussion of euthanasia is Michael Tooley, a contemporary American philosopher. He suggests that the only beings who have a right to
life are those who can conceive of themselves as distinct entities existing over time. Those entities who have no conception of self, or an obligation to maintain that self have a right to life. He puts it this way:

“The basic intuition is that a right is something that can be violated and that, in general, to violate an individual’s right to something is to frustrate the corresponding desire. Suppose for example that you own a car. Then I am under a prima facie obligation not to take it from you. However, the obligation is not unconditional: it depends in part upon the existence of a corresponding desire in you. If you do not care whether I take your car, then I generally do not violate your right by doing so.”

Such an argument of personal autonomy is valuable for thinking persons who are still in possession of their faculties. The greyness within such a philosophy begins when we consider near-death states, where consciousness becomes distorted, diminished and limited due to the dying process. Death must be distinguished from dying, with which it is often confused. Whether is it the dying process of humans or animals, the process involves the same moral values and distinctions. Death in itself is the termination of all experiences of pleasure and pain, and for those involved with the death, an end of all moral considerations for that entity. It is how a person or animal dies that defines its treatment by others. In the issue of euthanasia, the choice lies in whether we choose to make palliative interventions or not, and whether to shorten their life to alleviate such suffering that defines the ethical struggles of most philosophers.

Elizabeth Kubler-Ross in her seminal book *On Death and Dying* described the various stages of dying in humans in five stages; denial, anger, bargaining, depression and acceptance. In veterinary practise this is only applicable to the stages of grieving which the client will experience over its pet, but these stages are no less pertinent. Kubler-Ross remarked that it is important that there is a grieving process; the denial of dying can be more painful emotionally than the actual process of dying itself.

“The patient should not be encouraged to look at the sunny side of things, as this would mean he would not contemplate the imminent death. It would be contraindicated to tell him not to be sad, since all of us are tremendously sad when we lose a beloved person. If he is allowed to express his sorrows, he will find final acceptance much easier. And if we cannot face death with equanimity, how can we be of assistance to our patients?”

Though the moral difference between natural death and assisted death (euthanasia) is relatively clear cut, the legality of ‘mercy’ killing or euthanasia is not so.

During the past decade, the debate about legalising euthanasia in human medicine has grown in many developed countries. On 10 April 2001, the Netherlands was the first country to pass a law on the killing of patients at their request (euthanasia), which took effect on 1 April 2002. Belgium followed and passed a euthanasia law on 16 May 2002, which took effect on 23 September 2002 and is even more liberal than the Dutch one. Physicians will be exempted from criminal liability in those countries, provided they satisfy the so-called ‘due care criteria’. However, in medical history euthanasia has never been part of the medical duty of care. Instead, the goals of medicine have always been the relief of pain and suffering.

Medical journals have reflected this: surveys have assessed doctors’ attitudes toward euthanasia and bioethics articles have discussed the pros and cons. Supporters of legalisation argue that euthanasia is a continuation of palliative care and that doctors must respect patients’ autonomy, including a wish to die. The latter argument suggests that cultural differences shape opinions about euthanasia because the emphasis on autonomy is greater in English speaking countries than in other developed countries. However, the ethics involved are inordinately complex and should not be circumvented by well-wishing but ultimately misguided doctors such as Jack Kevorkian. Studies of Kevorkian’s client base from 1990-98 revealed that few, if any, of his patients were near the end stage of a chronic progressive disease. Most were able to travel independently. This emphasises the importance of medical care in cases of chronic illness, and the importance of palliative care until the patient chooses to stop medication (passive voluntary euthanasia).

There are four types of justifications for assisted suicide and euthanasia in humans:

- the argument from autonomy
- the argument from compassion
- the argument from the evil of suffering
- the argument from the loss of dignity
Medical ethics acknowledges pain as a process of human destruction and interprets the treatment of pain as an endeavour which makes life possible again or strengthens its remaining elements. When pain goes beyond the resources of an individual to continue their normal life, the border between meaningful and meaningless pain is crossed. In human medicine, three central tenets exist regarding the treatment of pain:

- understanding the pain as the end of all interests, as making life a burden or as evacuating the ego.
- respect of the autonomy of the patient by informing them about the experiences which they lose because analgesia.
- the multidimensional therapy of pain: i.e. all groups of care-givers must be involved, because it is not important to know which perspective is the best, but that no single perspective can stand alone.

These principles must be taken into account in medicine even when the possibilities of effective pain relief are exhausted. Sometimes the debate on the practice of euthanasia seems to replace the medical goal of honest treatment of the patient’s pain. Authors such as James Rachels argue that there is no moral difference between actively killing a patient and passively allowing a patient to die. The reason he does not see a difference is due to no obvious difference in outcome; the death of the patient on humanitarian grounds. Thus, it is less cruel for physicians to use active procedures of mercy killing. And for the same reason, using extraordinary means for prolonging life is morally questionable on the same grounds. The moral intention, it seems, is the linchpin; it is immoral to aim at the death of the patient, but not immoral to foresee their death.

Public support for assisted suicide has been growing despite the ethical questions raised by members of the medical profession. Previous research suggests that age, gender, experience, and religiosity are factors affecting individuals’ attitudes. Age, gender, and personal experiences do not greatly influence attitudes regarding euthanasia. What are more influential on positive attitudes toward it are whether a physician or friend/family member is involved, whether a child or a terminally ill patient was in pain. Euthanasia is less likely in those persons who have a deep commitment to the beliefs that suffering has meaning, that their life belongs to God, and that physician-assisted suicide is murder. Demoralisation (losing hope) has been commonly observed in the medically and psychiatrically ill and is experienced as existential despair, hopelessness, helplessness, and loss of meaning and purpose in life. Although sharing symptoms of distress, subjective incompetence in the former and anhedonia (lack of pleasures) in the latter distinguish demoralisation from depression. Demoralisation can occur in people who are depressed, cancer patients who are not depressed and those with schizophrenia. Hopelessness, the hallmark of demoralisation, is associated with poor outcomes in physical and psychiatric illness, and importantly, with suicidal ideation and the wish to die.

Many cancer patients describe the importance of spirituality in conquering cancer. For many, it provides strength in facing a life-threatening illness and allows them to better accept help from others. Placing a reliance on a higher power helps them through the journey by giving them a sense of meaning behind their experience. Spirituality thus appears to greatly affects patients’ journey through life-threatening illness and provides a sense of meaning despite the illness. To take responsibility for illness is clinically helpful. Some patients also perceive an increased awareness of the shortness of life, which made them live more intensely in the present. In severely ill patients, identifying meaning in the past (memories), present (daily routines, positive aspects of responsibility) and future (to pass on the patient’s lifework), improves their quality of life before death. The position of the guardian during a patient’s illness must be considered as well. There is a remarkable difference in appreciation of pain between a sufferer and their guardian. Quite often the sufferer is concentrating on present pain, whereas the guardian deals with the future consequences of the pain as well, compounding the present difficulties. Carers of human patients have described feelings of helplessness, fear and unfairness when witnessing a loved one in pain. Once the pain has been controlled, carers often describe a sense of peace and relaxation, implying the patient and carer can return to their old routines. Quite often for the carer, there is the lingering fear of a re-emergence of more painful events in the future. In veterinary medicine, the guardian’s fear of future emergence of pain for their animal is also a factor that contributes to considering euthanasia of their pet. Unlike humans, no evidence suggests that animals can predict re-emergence of pain in chronic disease. Whether animals are able to anticipate such states is unknown, although it cannot be discounted.

In humans, a new paradigm has emerged which basically rewrites our understanding of the
Christian commandments. Peter Singer in his book *Writings on an ethical Life* remarks that the Ten Commandments need revision. His points are as follows:

- That the worth of human life varies
- That as physicians we must take the responsibility for our decisions to take life
- That we respect a person’s desire to live or die
- That we must bring children into the world only if they are wanted
- That we cannot discriminate on the basis of species

In a decision to conduct euthanasia, physicians ultimately have to make a choice between an ethic of ‘doing no harm’ and the self-interest of the dying patient and their relatives. There are some people who go through life without ever questioning the ethics of what they are doing. Take for example Mark ‘Chopper’ Read, who has made a fortune on telling about his tales of wonderful woe. What ethical justifications can he ever make that will avoid him ever feeling remorse for his actions on other so-called ‘mass murderers’? The ultimate choice we have to ask ourselves is how happy will we be at some later date when we reflect on our actions of today?

**Euthanasia in animals**

I have often been asked by clients whether their pet was going to heaven or whether they would meet them again at their own death. And I can’t think of one vet who hasn’t been asked this same question. Whatever our religious beliefs (if any), it is important that we at least provide our client with some positive hope. Even if we believe that animals have no soul, it is important to give our client a positive outlook at the time of their pet’s demise. This makes it easier for them to grieve in a healthy way. From a legal and moral viewpoint, euthanasia of terminally ill animals is less complex than in human medicine. It is the moral assertion of the guardian in collaboration with the veterinarian to decide whether euthanasia is indicated. The final decision to euthanase an animal patient is usually based on the attendant veterinarian’s judgement concurring with the guardian’s consent and wishes. Though most veterinarians find the procedure initially fraught with emotional difficulties, with time, any emotional obstacles are surmounted by reminding ourselves of the minimising of suffering to the animal.
Practical Philosophy
Practical Philosophy

'It is not our purpose to become each other; it is to recognise each other, to learn to see the other and honour him for what he is.'

Herman Hesse

When the world is divided into two parts, the ‘perfect’ world of science versus the ‘flawed’ world of human experience, it becomes difficult to unite the two in order to reach the fullest possibilities of each person’s potential. By analogy, we could say that scientists cannot perceive beyond the noisy prison of their own discipline and rarely get to see the infinite sky of possibilities beyond, whereas the artist forever gazes at the infinite sky, unaware of the silent prison cell which confines them. Bridging this divide between the art and science of veterinary life allows for a more authentic clinical and personal life.

In being a successful veterinarian, it helps to focus more on what we are doing than worrying about what another professional is up to. If we get ourselves in the right emotional and psychological state, the rest of the professional will follow suit. We can’t ignore what other professionals are doing, but we can’t also ignore our own need for personal expressions of individuality and creativity. We have seen from the discussions on ego and emotions that who we are is not simply our cognitive mind. All mental states, whether they be opinions, beliefs, knowledge, moods, personality or behaviour are mutable. Sufficient neurophysiological data now exists to prove that what we think and how we think are not constant, permanent or unchangeable. Certainly, our intellectual knowledge changes from year to year and what we were taught at university is usually redundant every generation (20-30 years). Only the important scientific facts and clinical and surgical skills remain – these things are timeless.

What is most important to remember is that the personality traits we are born with are not chiselled in stone. Having a history of familial depression, bipolar disorder, disagreeable mood dispositions and or even schizophrenia aren’t a death knell. Rewiring of emotional centres in the brain can be permanently changed through counselling, positive thinking, meditation and strong religious convictions. It is merely a matter of ‘changing your mind’ – deciding to put in the work, which is no different to any other form of physical exercise except this is with the brain. It also explains why women are far more successful at it than men.

This ‘plasticity’ of the brain is emerging as a new psychological paradigm for the twenty-first century and cannot be ignored. Behavioural and neural plasticity in humans is one of the crucial issues in modern cognitive neurobiology. It is known that what we think is what we feel, and what we feel is registrable using sensitive instruments such as MEGs and MRIs. What we feel subsequently reflects our moods, and our moods lead to formation of our personality and result in predictable behaviour. Change your thinking and you change your behaviour. Work on being deeply peaceful, caring and compassionate and eventually you can’t fake it – it becomes a part of your psyche. The 80s mantra ‘you are what you eat’ revolutionised western outlook on a healthy lifestyle. The twenty-first century’s mantra is ‘you are what you think.’ Effect a permanent change to those unwanted mental habits that you don’t like or the people around you put up with and you be surprised at not only the improvement in interpersonal relationships, but the lightness of your mood and positivity of your outlook. We must be passionate about our lives. Without this life-blood of existence, there is only drudgery. Even the things which once inspired and motivated us, such as intellectual curiosity, love, sex and play, lose their meaning. We become as sterile as our surgery. We become tunnel-visioned, opinionated and boring. Seeing beyond our own intellectual and emotional point of view allows us to communicate more
effectively with others. Knowledge, as we have seen, is only one of seven facets of professionalism. Developing skills of emotional clarity, communication, deeper compassion, confidence and contentment are also integral to becoming self-actualised.

The evolution of scientific knowledge arises not only from research but through incorporating it into a clinical environment where other issues, economic, ideological and philosophical modify its integration in clinical cases. As veterinarians we should honour each other’s uniqueness and diversity. The most difficult truth of the human condition is our imperfection and mortality, but these, rather than detracting from science, enhance it. As veterinarians, we should be wary of the lure of science and technology as a substitute for purpose and meaning both as clinicians and as human beings. That we are prone to error and ultimately death makes us more specially placed to enhance the improvement of animal health and social betterment and find fulfilment in this pursuit.

Freedom and responsibility, how much of each and how they are balanced, have profound implications for our personal lives and for our work. The health of a person and their achievement in the workplace are enhanced when they have some freedom and some responsibility, but not too much of either, and when civil associations of individuals rather than individuals acting alone are the essential social units. The consistent association of social contacts with health and productivity provides strong support for the premise that intimate relationships are the focus around which people's lives revolve. Membership of a 'social network' may be merely conforming to a reigning social norm, and this could mean having to pay an important price in the loss of creativity associated with individualism. But social conformity should not prevent individuals from going their own way, and it should be possible to combine the luxury of individuality with an active life in civic affairs. Less than complete freedom may fall short of existential utopia, but it may be best for our health and well being. We should therefore strive to cultivate a core morality of professionalism, namely:

- **Conduct** - observing the ethics of our profession at all times
- **Compassion** - observing the welfare of the patient/client, and coworkers.
- **Competence** – maximising effectiveness of knowledge and skill.

If we practise professional morality, then we can at least be comforted by peace of mind, knowing we have done our best and that recriminations, slander, litigation, cruelty and immorality are avoided. If nothing else, we’ll be able to sleep better at night.

There will always be times when a vet will misdiagnose and/or mistreat, and hopefully these will be infrequent. We should take comfort in the knowledge that our profession is evolving alongside society as a whole and that there is no goal or end-point in terms of our professional skills, more an unending journey of discovery. We should be able to embrace change, to adopt improved methods and more clarified knowledge, and relinquish outdated skills when necessary. This is a facet of growth, which allows us to deliver the best medicine and surgery to our patients and their carers. Ensuring that we are fulfilled on a personal level (the pyramid illustration exemplifies our personal needs) is the first step to meeting these demands at a professional level.

Being an adult today no longer means have secure knowledge and routine at one’s disposal, but rather being able to endure anxiety and uncertainty in society. Veterinary science is no different. As a consequence of ever changing technologies and social norms, veterinarians today must develop their own strategies in order to relate these changes to each other. The interaction between the profession and the general public is the vital life force which underpins our entire profession. Individual vets must be able to personify two roles; being firm in their professional discipline and being fluid in knowledge. For a practising veterinarian, learning ends when curiosity dies, and this can happen at 25 or 85 years of age. The creative life ensures we adapt to an ever changing knowledge and skill base. Veterinary science doesn’t so much change with the times but change the times. It has become what it is by the creative push of thousands of veterinarians worldwide, of which each vet forms a vital and unique part. We should retain a little of the student within us at all times in order to muster the creativity necessary for our changing culture.

Beyond academic knowledge, there are tremendous personal and professional benefits to applying practical knowledge (i.e. philosophical truths) to every day life, namely:

- a meaningful vocation that becomes an avocation
- a greater depth of appreciation for one’s self and others
- deeper happiness in interpersonal relationships with family, loved ones and the community in general
- a greater inner strength to overcoming life crises.
It is a philosophical approach to life which deepens our appreciation of experiences and gives meaning to what we are and what we do. An academic life can be intellectually fulfilling but also emotionally alienating unless we maintain a sense of purpose and passion in everyday moments. We carry with us the emotional experiences of our childhood, youth, university struggles and professional life, and without ‘meaning’ we are left with a feeling that we are lacking in something. This leads us to assume that an external ‘fix’, whether it be graduating as a veterinarian or being stimulated by knowledge, drugs, socialisation, etc, is the only method of alleviating what is absent. We externalise our problems by saying ‘It’s your fault,’ or ‘It’s their fault,’ when in reality everything in one’s life is a product of how we look at the world. Changing one’s attitude is often the hardest thing of all to do, but taking full responsibility for one’s life not only abolishes guilt, fear and anger but also is a powerful motivator for enacting change for improving one’s life.

A lack of self-esteem can’t be corrected by gaining more degrees or more wealth or more health, although these things don’t hurt. Accepting what we are and where we are at this very moment will. Letting go of past problems, failures, recriminations, hostilities – these things are subtle yet powerful enactors of personal growth that outlast any get smart, get rich or get healthy fad. Accepting that something sublime operates within all of us, whatever that is, opens our minds to the possibility of humility, through which we can feel peace, contentment and fulfilment in professional and personal lives. There is no proof that there is life after death, although the evidence is growing towards a suggestion of there being something there. However, we have more than one life as it is; a professional, a personal and an inner life. We live many lives, and interact with many other worlds both veterinary and social. Is this not enough to worry about, to improve on and perfect. Possibly, what we do in this life is manifested in the after life, but even if it doesn’t, and we merely return to dust, doesn’t a ‘good’ life in itself justify the effort we make? Surely the returns of a good life (peace, good will and sanity) are merit enough to warrant such effort? It stands to reason that if all the causes of a good life are practised, nothing can prevent the effects of these deeds (conduct, compassion and competence) from arising.

Whether we realise it or not, as a veterinarian we belong to a collegiate of fellow professionals, a professional group whose whole is greater than the sum of each individual. And it is not only a belonging to professional peer groups, but also to a community of family, friends, and cultural or religious groups. If we have a feeling of ‘lack,’ it can only arise from forgetting that we are in essence more than our scientific life or profession.

The person that we identify with is not our professional face, our degrees, or our social status. It is in fact the deeper person which needs nothing but silent communion with itself. It is in that silence that the deepest peace and meaning is found, where lack is non-existent. From here, we can move back out into the world with confidence and a possibility of contributing to the profession in more meaningful ways. This sentiment is best summed up by Thoreau when he states that:

‘Most of us live lives of quiet desperation… To be a philosopher is not merely to have subtle thoughts, nor even to found a school, but so to love wisdom as to live according to its dictates, a life of simplicity, independence, magnanimity, and trust. It is to solve some of the problems of life, not only theoretically, but practically.’

If nothing else, it is important to remember that developing ourselves as individuals will enhances our personal performance. Depending on your motivating, this equates in real terms to a) increased clinical skills, b) improved profits or c) increased emotional and spiritual meaning. Whatever our motivation for getting out of bed each morning, it is our passion which keeps us at the coalface. What we feel imbues our actions with resonance. Our co-employees and clients see this. Our actions, body language and vocal tone belie our emotional state. Thus, to develop self-efficacy and responsible leadership of others we should remember to;

- **Continue learning** - Study and practise of skills are essential to maintaining competence. Books, the Internet, conferences and peer discussions all help maintain our knowledge base and strengthen skills. But don’t compare yourself to others in this regard. Rather, see yourself as others see you. Other people are our mirror to what we think – thus, they help ensure we aren’t crooked in our logic, feelings or habits. The learning we get from books must be supplemented with life skills. Knowledge is just a tool. It’s good to know how to wield a hammer but also to know when to use it. Don’t be like the carpenter who was known as ‘lightening,’ not because of his speed but because
he never hit the same place twice.

- **Have a vision** - Write your goal(s) down or at least visualise them clearly. Then develop specific steps and activities that will help you get where you want to go. See where you want to be in five years time. Be that person now in vision and feeling. If you can’t see yourself in that goal in the future as an emotive image, it’s not going to happen. It’s as simple as that. Also, make sure that vision involves other people otherwise you might be disappointed with your goal.

- **Teach other people what you know** - Embrace the maxim ‘teaching is the best way to learn’ by teaching others, whether they are clients wanting to know how to pill their dog, or a nurse wanting to know what a specific drug does. It is a good way to help sharpen your own talents. It may also help you to realise how little you know and how well they know it. Respect the pupils, because we are all pupils in life’s class.

- **Take responsibility** – Don’t post blame – it always comes back ‘Return to Sender’. The finger pointer usually holds the blame. Anything which causes conflict in you from those around you is not their fault but a reflection of inner work that you need to do. Be pro-active. Don’t wait for someone else to ask you to do something you know needs to be done. Work closely with others, and don’t become a ‘Lone Ranger’ worker. But take care of the details that need attention. Go the extra mile with people, if only to get a new view. You’ll be surprised most people will be happy to pay for the petrol.

- **Clarify your ego** - Let the smoke of daily emotions settle after work. The more we hang onto emotional states, the harder it is to solve the relevant problem. Learn to tame the frenetic monkey mind, as the Zen masters call the ego, in order to see deeply into things. A tame mind leads to peacefulness. Don’t try to be a saint. Everywhere we go, smoke fills the air. Just slowly work at trying to settle it from around you. Remember - even passive smoking can kill you.

- **Avoid the ‘us-them’ mentality** – Dualistic approaches with people (‘are they a friend or enemy?’) is a sure sign your fears are becoming unmanageable and it will directly impact on your sanity and interpersonal relationships. The networks you establish with others often helps you discover opportunities for growth just through conversations. Become personal with employees and clients. It doesn’t mean having to be emotionally burdened with their problems unless you want to do so. Remember, not all PR skills involve the use of gloves and lubricant.

- **Be an oasis, not a dumping ground** - If someone comes to you with a problem, don’t let them dump it on you. Resolve the issue not by taking on their dramas but by clarifying the problem. This lets them solve the issue themselves - they feel refreshed for it and can get on with their work less burdened.

- **Avoid labels** – Labels devalue emotions, people, races, beliefs, and animals. If you think or hear that someone is ‘prickly,’ it doesn’t mean you have to avoid them. Usually, you or them have some personal issues that need resolving. Often, talking through a problem is better than finding yourself amongst the cacti. Watch anger – it is the main side-effect of clinical stress. Don’t be proud of labelling yourself or someone else as ‘not tolerating fools gladly’ – it just another term for being bad tempered. Remember, labels are only good at K-mart.

- **Avoid self-cherishing** - This clinging to the ego is the opposite to self-love. Don’t let your spouse, friend or client tell you about your ‘attitude.’ Self-cherishing or self-sabotage are two sides of the same coin. Personal evaluation will help you identify your own emotional strengths and weaknesses. As you evaluate, find ways to improve. You may not turn every weakness into a strength, but you can become more effective in the growth process. Avoid hanging onto past problems. Avoid a victim mentality (‘woundology’) which clings to the fears and pain of the past as if they are still happening. Just because you’ve been a victim of abuse doesn’t mean it should become a crutch, a crucifix or a scythe. Use it as a scaffold to overcoming emotional pain. We all have scars, both physical and emotional, but they are postcards of where we’ve been, not where we are. If you have to cherish anything, then cherish the scar, but not the scare.

- **Absorb yourself in the moment** – this is the only place where true ‘meaning’ exists. Enjoy the moment whatever it brings, good or bad. In the present moment, there is no past regrets or future anxieties. Mindfulness is total absorption into the present moment, where emotions do not exist. There is nothing cold, analytical or unfelling about it. Nature is not judgemental – why should we be? Don’t confuse drama with meaning. ‘Days of our Lives’ is full of tired old actors who can’t get meaningful parts. Practice being mindful of your emotions, or else suffer having your mind full of emotions.

- **Accept change** – if there is one thing that is constant, it’s change. Bankers on Wall Street would go
broke without it. Not all losses are financial or measured in terms of friendships. Some losses are beneficial, like not having to spend hours grooming when you’ve gone bald.

- **Don’t expect life to be fair** – it’s just heartily indifferent. The universe operates under only half a dozen laws of physics (gravity, thermodynamics, entropy, etc). So when you’ve been thrown into gutter, there’s no point getting angry with gravity for throwing you there. And it’s no use knowing why you fell because the answer’s invariably too simple for you to believe – you tripped or someone tripped you. What’s more important to know is how you tripped so it doesn’t happen as often in the future. Grieve the grief. Laugh the joy. Don’t hold back.

- **Don’t confuse inanimate with animate objects** – arguing with the red light to change faster, or the kettle to boil faster is ludicrous. Only living creatures are worthy of emotions. Discover a larger perspective. Discover the soothing power of compassion.

- **Don’t redirect emotions** – if you’re pissed with your partner, don’t redirect it onto the cat, the couch or yourself. Let it out or let it go. As a generalisation, men have less trouble at letting emotions go and more trouble at letting emotions out, whereas women are the reverse. For men, don’t become a minefield - repressed emotions only need a spark to detonate. For women, don’t baggage the camel unduly. Keep things in perspective - we’re all going to be dead soon, so make the most of it.

- **Discover the power of optimism** – it is the protective armour against depression, low self-esteem and the pain of disappointment and loss. No pessimist ever discovered the stars or DNA. Alexander Graham Bell remarked that ‘when one door closes, another opens; but we often look so long and so regretful upon the closed door that we do not see the one that has opened for us.’ Find the inner *here*. Avoiding danger is no safer in the long run than outright exposure. Life is either a daring adventure or it is nothing.

- **Develop a relationship with animals** – if we see them merely as a dog or a horse or a parrot, there is no individuality here, no personal relation between vet and animal. Don’t commoditise an animal by being speciesist. If you can’t identify with an animal, you can’t identify with the natural side of your emotions. You also colour your reality of what animals are. The more you blinker your world with opinions, the more brittle your mind becomes.

See to it that you live your life fully and pursue your own personal happiness with vigilance and elegance. Finding contentment in practice requires understanding the pyramid of human needs (see Figure 6). Rather than trying to *find* the meaning of life (which is like ploughing the sea - no sooner do we make an impression than it is erased by the turbulence around it), it is far more productive to *have* meaning in our life by living in the moment, knowing that the future comes just one day at a time.

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*Figure 6. Hierarchy of needs, adapted from Abraham H. Maslow.*
Getting a grip on yourself

The Ego's cry:
‘If I want it, it's mine.’
‘If I give it to you and then change my mind, it's mine.’
‘If I can take it away from you, it's mine.’
‘If it looks like mine, it's mine.’

This section deals about the ego. Getting a handle on who we are requires that we recognise what we are and what we are not. There are two identities to any person; a conventional ‘I’ (ego/self) and a ‘not-I’. Most religions denote the not-I as the spiritual essence. Rather than giving a mystical ring to something that is not necessarily mystical, I have made a more pragmatic definition of the two;

Interconsciousness – the conscious mind that deals with maintaining interpersonal relationships
Intraconsciousness – the conscious mind that deals with maintaining personal integrity

Our intraconscious mind (or ego) is what we conventional use to interact with people. What we use is our personality, our opinions and attitudes, our cherished beliefs and strong moral convictions all stem from an inner-directed mind that is self-referencing, self-analysing and self-critical. The incredible thing about the intraconscious mind or ego is that it is what gives us our uniqueness and which saves us from self-destruction, but which also is the very cause of our self-destruction in times of difficulty. How often do we consider the retreat into silence or lash out with anger when we are being attacked? The ego knows only how to preserve its own integrity and thus the body in which it is housed. That the mind may brew in discursive argument with itself for hours afterwards is irrelevant to the fact that our ego has once again saved us from the grizzly bear of criticism.

The interconscious mind (our ‘nobler’ or self-actualised aspect) is distinguished from our intraconscious mind whenever we step in to quell an argument, settle a grievance, foster friendships, seek new circles of acquaintances and maintain friendships. The interconscious mind grows out of the intraconscious mind as we mature from childhood to adult life. In some cases, interconscious actions, can threaten a person’s very survival - altruism being an example, such as saving a drowning child from a swollen river, or pulling an elderly person to safety from a highway. Walking into a room where people are ‘throwing daggers’ with their eyes is the test of any diplomat, and defusing such a seething situation is the penultimate interconscious act, short of self-sacrifice.

The subconscious is primarily a memory bank of social/individual memory imprints, traumas, instincts, etc and the ordinary conscious mind which is primarily for cognitive functions.

Most of us operate as ‘I’ (the ego or intraconscious mind). Any sentence starting with the word ‘I’ is talking about the ego. How can we differentiate the two? The table below gives you a rough rule of thumb as to who is pulling your strings and who is telling who what. Note in particular the influence that the ego has on the conscious mind, which in itself is influenced by the subconscious mind, social effects, etc. The diagram is highly simplistic but may give you a better grasp of things to look out for in the future.
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<thead>
<tr>
<th><strong>Inter-consciousness</strong></th>
<th><strong>Intra-consciousness</strong></th>
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<tr>
<td>You feel comfortable, not anxious</td>
<td>You feel anxious and restless</td>
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<tr>
<td>You feel loving</td>
<td>You love only your ‘friends’, not enemies</td>
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<tr>
<td>You respect your body and mind</td>
<td>You are motivated by short-term desires</td>
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<tr>
<td>You feel confident and patient</td>
<td>You criticise and find faults with everyone</td>
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<tr>
<td>You understand your life’s purpose</td>
<td>You have judgemental attitudes</td>
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<tr>
<td>You are attracted to natural beauty</td>
<td>Your happiness is short-lived</td>
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<tr>
<td>You are not afraid of yesterday or death</td>
<td>You crave attention or repulsed by it</td>
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<tr>
<td>You are curious and seek wisdom</td>
<td>You become defensive when criticised</td>
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<tr>
<td>You are honest in speech, thought &amp; action</td>
<td>You crave but are dissatisfied with pleasure</td>
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<tr>
<td>You hate no one</td>
<td>The past and future disturb you</td>
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<tr>
<td>You are open-minded about criticism</td>
<td>You are terrified by death</td>
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<tr>
<td>You are happy to defer gratification</td>
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<tr>
<td>You embrace responsibilities</td>
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Anger Management

(or, how not to lose your head when everyone around you is losing theirs)

Nagarjuna, a well known Indian scholar, once said ‘When you have an itch, you scratch. But not to itch at all is better than any amount of scratching.’ Nagarjuna was referring to why he decided to chose a celibate life, but his insightful statement applies equally well to overcoming anger. Everyone is familiar with this emotion. To live is to experience anger, in its multifarious forms; anxiety, annoyance, discontent, depression, lament, bitterness, spite, enmity, revulsion, rage, wrath, hate and violence, to name just a few. The beauty about anger is that it is loaded with information and energy.

Recent research has shown that there are five things which make us anxious (a facet of anger): those things which have already happened (30%), those things which will never happen (40%), things people think/say about us (12%), health-related issues (10%) and things we should be worried about (8%). We all know that at times we lose our cool or perhaps say something we may later regret, but most of us believe we don’t have issue with this particular emotional state. We are after all - professionals. We have learned to rise above such base instinctive feelings. We intellectualise and dismiss such primitive feelings. Or have we? On a more practical note, I have assisted with or been assisted by vets during difficult surgical procedures, and it constantly amazes me the composure of some vets who are unflappable in crisis. I once assisted a vet who patiently clamping a severed dorsal aorta he had inadvertently cut while doing a hemilaminectomy. With steady hands and judicious use of swabs, he corrected his error and went on to complete the surgery calmly and uneventfully. I on the other hand, was lathered in sweat and terrified the dog would die post-operatively, but it never did.

At other times, I have had vets lose their cool at a relatively minor complication, such as one who had a needle break during routine skin suturing. I found my ears stung by his curses and tantrums, watching him berate his nurse for not replacing the old needle, and me for not noticing it was blunt. However, displays of anger don’t always reflect the inner state. One vet, who I considered a surgeon par excellence, and admired the way he held such a laisse fair approach to many surgical challenges, had a vocabulary of curses which was an education in itself, yet at surgery’s end, was full of smiles and jokes, delighting us with his restored humour.

As shown in the diagram, the ‘happy’ or self-actualised person operates from a position of contentment with themselves. There are few conflicting emotional states, and when issues arise, they are dealt with in constructive ways which do not seriously impact on a persons self-esteem or self-respect. It takes practise to become emotionally stable and arguably, it is achieved only after a travail through the dark woods of one or another serious emotional discord or challenge. In the normal maturation process, an individual learns to maintain their self-respect by assimilating their emotional experiences into their repertoire of experiences. It is only when someone experiences an emotion that is outside of their experiences that self-respect is challenged. At this point, conflict arises and a normal response is to challenge the emotional issue (usually caused by another) through asserting the personality. Through assertion, one either recovers a sense of self, or one stays in a assertive mode or degenerates further into states of anger, sadness, despair of lethargy. Life has a way of throwing us all ‘curve balls’ that we cannot anticipate or protect ourselves from. It is therefore a measure of a person not where they are but how well they try to maintain their self-respect. Putting someone down because they are depressed, angry or suicidal is counterproductive and belittles their efforts to overcome whatever the issue may be.

Being angry, sad, depressed or suicidal is only a problem when someone cannot get ‘verification’ of their emotional state from someone else, or they lack the tools to overcome the problem. Lacking emotional tools is a common problem with people, and it is a fault not with the individual per se, but with society’s expectations. We are taught to make a ‘mask’ to the public and our friends, of appearing happy even if we feel lousy. This mask or ‘persona’ was first conceptualise by Carl Jung, although the ancient Greeks used such ‘masks’ for theatrical purposes. It is not a problem that we
can put a mask on, but that we forget to show our real selves to our loved ones, who are the only ones available to help us through these difficult times. This is why it is so vital to ensure a close circle of ‘intimates’ who know us better than we know ourselves. Our partners, friends and loved ones are our barometer to emotional help. If we are truly down in the dumps, it’s better to seek help than to find ourselves backsliding down the emotional thermometer.

Diagram 3. The emotional thermometer

<table>
<thead>
<tr>
<th>Psychological state</th>
<th>Emotional state</th>
<th>Physical state</th>
</tr>
</thead>
<tbody>
<tr>
<td>peace &amp; equanimity</td>
<td>SELF-RESPECT</td>
<td>normal activity</td>
</tr>
<tr>
<td>anxiety</td>
<td>ASSERTIVE</td>
<td>increased activity</td>
</tr>
<tr>
<td>malevolence</td>
<td>ANGRY</td>
<td>hyperactivity</td>
</tr>
<tr>
<td>self-deprecation</td>
<td>DEPRESSION</td>
<td>sporadic activity</td>
</tr>
<tr>
<td>self-destructive</td>
<td>DESPAIR</td>
<td>hypoactivity</td>
</tr>
<tr>
<td>behaviour, suicide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>loss of self-integrity</td>
<td>LETHARGY</td>
<td>inactivity</td>
</tr>
</tbody>
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Put simply, anger arises from psychological conflict. Conflict originates when we can’t have what we want, not being satisfied with what we have, being dissatisfied with what we have or not being able to get rid of something we have. Anger isn’t something we can’t get rid of by losing it. Anger is short lived, has no inherent mass, and occupies no physical space. It is purely an inner state of mind which can only exist in the presence of the ego. In achieving a state of peace, where anger is minimal, we do not set out to destroy the ego, as this is counterproductive. An ego is an essential part of a healthy mind. Far more importantly, we should attempt to see anger as a reaction by the ego to something (an action) outside of itself; whether this action be a verbal insult, a physical insult, etc.

Anger is something we make. No one is born angry. As we grow, it is the conflicts that act upon the ego which cause anger to develop. After anger has taken root, it causes a whole plethora of symptoms; physical and mental abuse to others and ourself, relationship problems, and depression. Anger, one of our three basic fears, arises from three misconceptions; that anger is personal, that it is permanent and that it is painful.

- That it is personal - Our first misconception about anger is that it is personal to us. We believe that our anger is unique, and independent of the universe, and that no one has felt it before or will ever feel it the way we have. A case scenario where getting angry could seem justified is when the client questions your diagnosis. He persists, and this makes you angry. These types of people you will find argue with everyone, you are not an exception. If you allow yourself to get angry, this will only exacerbate the problem. Such clients will only dig in deeper, and in the end you will be
both angry. Never lose your temper. Anger means you are no longer in control of the situation. In cases like this, it is best to placate the guardian. Let him think he had a point, and then move on. If he insists he knows better, then best to agree with him and prescribe the treatment as you would have for what is really wrong with the animal. The guardian feels vindicated, and you have done what is required of you as a vet. Remember always, it is the non-paying client (the animal) that matters, not its guardian.

➢ That it is permanent - The next misconception is that our anger is real and lasting. Normally, anger has a half-life of fifteen minutes. Yet we worship certain angers (resentments) like a religion. Anger is a reflex. It is how we deal with it that makes it a complex. For example, a dog bites us and our body releases adrenaline. We jump back in fear, then after the client has restrained the dog, we calm down and continue the consultation. As the adrenalin washes away, we can either choose to let go of our fear, or take it out on the next dog we see. There is a famous Hindu story about a king who asked for a ring to be made for him that would epitomise all the wisdom he needed to know. The blacksmith who made the ring thought long and hard about what sort of ring to make and finally when he presented the gift to the king, the ring had a small inscription on it which read ‘This too shall pass.’ Each time the king was enjoying something, he would pause to reflect on these words. Again when misfortune struck him, he would again reflect on the writing on the ring, bringing him much peace of mind, knowing that nothing good or bad was truly lasting.

➢ That it is painful - The final misconception about anger is it is painful and thus we need to protect ourself from it. Anger, although evoking strong physiological responses within the body is basically an arising of strong thoughts, which when left uncontrolled, release vasoactive amines which manifest as changes in body functions, including heightened sympathomimetic responses such as elevated heart rate and respiratory rate, dilated pupils, increased circulation to large muscle masses for flight or fight and elevated adrenaline and cortisone levels. When we touch a naked flame, pain evokes future avoidance. But we learn from such pain. We do not resent that the flame burns. We do not develop an anger or hatred for fire, yet people maintain a fiery anger over innumerable things from wrongs others have done to them to disappointments over things which should have or did happen or will happen to them.

Anger arises from the repulsive force of conflict. Either we have something we don’t want, or don’t have something that we want. It arises all the time in unexpected, unannounced and in unwanted ways. It is influenced by factors that we can either control or not, and that are either predictable or not. Assuming that the only thing we can ultimately control is ourselves, the following table illustrates how some of our stronger emotions arise.

Table 2. Origins of emotions based on predictable vs. unpredictable external events. Adapted from Lindsay (2000).

<table>
<thead>
<tr>
<th>Event</th>
<th>Unpredictable</th>
<th>Predictable</th>
</tr>
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<tbody>
<tr>
<td>Controllable</td>
<td>ANXIETY</td>
<td>OPTIMISM</td>
</tr>
<tr>
<td>Uncontrollable</td>
<td>DEPRESSION</td>
<td>FRUSTRATION</td>
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Obviously the best solution in an event we experience is to develop inner control of our emotions. Anxiety is a natural phenomenon which we can use as an impetus to overcoming our fear of being unable to cope with what we are experiencing. The more we try to protect ourself from the anxiety which arises, the more we feed the anxiety. A dog may bark and we find ourselves exploding in rage or violence. The opposite of self-protection is embracing. It is a process similar to love, or compassion. It is the process of healing ourselves of anger by giving love without judgement of species, race, religion, age, sex or creed. As the Indian mystic Shantideva once said, ‘there is no evil greater than anger, and no virtue greater than patience.’
Dealing with internal anger

Human psychiatry has taught us that real and lasting transformation only occurs when a patient faces their inner fears and releases them. Anger which is cherished or held onto for more than a few hours, especially for days or weeks or years, manifests as physical or mental disease. What causes anger, or any other strong negative emotion such as jealousy, greed, lust, etc relates to pre-existing ‘buttons’ or conditioned ways of thinking. The buttons which people seem to know how to push in all of us can be categorised into four groups; Pleasure and pain; Loss and gain; Praise and blame; and Fame and shame. Most of us at one time or another allow our lives to be dominated by the things that push these buttons, and in doing so, fall short of the freedom available to us in the present moment. What motivates nearly all people in life is only a search for pleasure, gain, praise and fame, obviously in varying amounts. We are also motivated to avoid the things we fear, namely pain, loss, blame and shame. How true it is that often we only realise how much we have until it is lost. To not appreciate what we have is like a fish hearing the word water and not knowing what it means. At least being aware what motivates us may move us closer to accepting things when they go awry. It is normal to experience anger and sadness when your business is burgled, or you come to find your spouse in bed with someone else. But realising what motivates our every moment may help reduce our attachment to these things and hopefully reduce the monumental catastrophe that occurs within us emotionally when they happen.

As we become more and more attune to the origins of our emotions, our buttons begin to lose their hold over us. We find greater and greater freedom from conditioning as well as from unfulfilling patterns, fixations, behaviours and neuroses; we find ourselves becoming freer of illusions about who we are and what we need. We also tend to lose our attachment to overweening attachment to outcomes that we think are important to our emotional well-being. We become more free to express ourselves moment to moment – free to experience the natural bliss and spontaneity of just being. Ultimately we learn the art of forgiveness, which essentially means that we have let go of the hope for a better past.

It seems hard for people to think they can have any control over their emotions. The excuse that ‘that’s how I am’ or ‘I’ve always been like that’, is to set ourselves up for emotional difficulties in the future. Anger which is habitual invariably leads to anxiety and physical consequences of disease. To relish in the moment’s freedom where we have no anger about the past or the future is the only place to find solace. This doesn’t mean that we live for the moment in the sense that we seek hedonistic or narcissistic pleasures to avoid the future. It means living in the moment, concentrating on each second’s passing. In so doing, we can focus on our emotions and find it easier to deal with them. No one is saying that anger management is easy. It is work, but real work. There is no soft-focus Hollywood ending to anger management or for any realistic emotion management system.

There are only three types of failure in life; the failure to stop trying, the failure to stop trying, and the failure to stop trying. In becoming a successful vet, the last one is the most important. Wealth, status amongst peers, or achieving happiness are only secondary to developing compassion and wisdom. After all, a successful sociopath can be rich, famous, intelligent and psychologically content. But though sociopaths have adapted to cope with a life bereft of emotional functions, veterinarians can only seek other excuses for any lack of emotionally competence.

No obituary was ever written for a vet which read ‘Here lies a vet who was a great person because he was wealthy’ or ‘Here lies a vet who paid his bills on time.’ The ancient Greeks never wrote obituaries, only wanting to know whether someone had lived a passionate life. In the end, great vets have only two main things which can distinguish them - great knowledge and/or a great compassion (i.e. service for their job, profession, family, community and/or clients). Throughout history, there have been only two types of famous people - great thinkers and great lovers. The world over remembers and cherishes the Einstein, Socrates, Tolstoy, Mother Teresa and Ghandi. Few look back fondly to the ambitious conquerors such as Alexander the Great, Ghengis Khan or Napoleon. It is what we can learn and how we can help that are above all our greatest contribution to society. Each of us, in our own way, can make a contribution in our own original way. To first do no harm, and to secondly contribute knowledge and service are the greatest achievements of any professional.
Dealing with external anger

The notion of winning or losing an argument is an illusion. In any struggle between two people at an emotional level, the ultimate struggle is not against the opponent but against oneself. When we are battling against ourselves, how can we win? When there is no inner anger, it is impossible to feel anger toward another, and we are then free to deal with the issue at hand. The best way of clearing away anger is by loving your enemies. Why should we try this? Because all inner anger manifests externally as an enemy. So if you can’t picture yourself loving your enemy, you will always have anger and you will always have enemies. Practise this, but don’t expect immediate returns. Remember, it takes years of practise to be an overnight success.

If you are angry, you can either fake you’re happy or else just ‘be there’ with the client. Even when you’re angry, you can still give a grieving client a small gift like a smile, a tissue or a cup of tea. The greatest benefit of releasing anger, apart from feeling happy, is creativity. Creativity is the movement from anger to joy. One way of releasing anger is by pushing our boundaries of creativity. In addition, if you want to be truly creative, you have to truly release your anger first. Consider these four practises to help handle anger.

1. Notice what you are feeling
2. Recognise the feeling rather than denying it
3. Analyse the feeling by first deferring a reaction to it.
4. Behave in an intentional way that uses the emotion creatively rather than destructively

You have to realise that your world is a creation of your own mind, and many people have a life of ‘living hell’ because they are unable or unwilling to let go of their cherished emotions and strive to find a solution by dealing with them. Our attitudes, opinions and expectations are what shape our ‘reality,’ not the real world itself. Nothing is perfect, but then again nothing is all bad either. There is an ancient Zen poem written in China by the Third Zen patriarch, which says;

’Do not seek for truth,
Merely cease to cherish your own ideas and opinions.’

Though this poem refers to spiritual truth, we could also say that existential truths are found only by letting go of our preconceived ideas and opinions of how things should be. So many people remark that in the search for true love, their quest only ended when they stopped looking. It’s far more important to be worthy of love, and when we have got ourselves together, and stop trying to find someone to make us right, then invariably we find someone who mirrors our conception of true love. Whether that ‘true’ love is ultimately ‘true’ is debateable, but if we find this love bring us rewards in terms of deeper meaning, happiness, in having better control of our emotional life and greater capacity for interpersonal relationships with others, then is the textbook definiton applicable anyway? There is no higher spiritual purpose but to have deeper interpersonal relationships anyway. If we could do that, then there’d be no need for religions, philosophies, books or wars. But in the meantime, it pays to keep working on our emotional intelligence rather than seeking some exterior ‘spanner’ to fix our woes. To continue working on our emotions, some things might be worthy remembering to keep your emotional machine clean;

Get a grip of your emotions – keep them in first gear, under brakes
Avoid ‘hidden agendas’ – emotional mine fields lead to self-sabotage.
Avoid placing superficial values on people – this causes emotional discord with others
Avoid exploitation – this is a form of emotional prostitution
Avoid co-dependence and clinging – emotional crutches only weaken our emotional legs
Avoid living in the past – if the past is painful, train to look back and see nothing

Former glories or future fames are powerful motivators for what we do in the present. But many people ride on the shirt-tails of what they use to do (make love five times a night, run the five minute mile, recite π to the fifteenth decimal place, etc). Killing ourselves for our dreams is not they way to find a better life if it means dying or estranging our friends to get their. I remember by paternal grandparents who came from Greece during the civil war to find a better life in Australia. My grandfather worked 20 hours a day for fifteen years to establish his café business and give himself and his family a better life, only to die of a heart-attack before he could reap any rewards from his self-
This doesn’t mean we shouldn’t pursue our dreams listlessly. There is nothing to gain from becoming emotionally disinterested, detached, unfeeling or careless of our dreams, for others or for animals. What it does mean is that we feel the right emotions rather than feeling the entire emotional rainbow and exhausting ourselves. Flowing through life with the insouciance of a vagabond is great if you want to own nothing and have only fleeting friendships. We cannot judge other’s life choices. Ours is not necessarily a better life for having more money, friends and skills. For none of these things are permanent. The only lasting qualities are how well we have loved and how well we have learned to let go.

There is a time and place for the unlimited joy of lovemaking, and likewise there is a time and place for unabashed sorrow or grief. To feel too much is no better than to feel too little. It is better to reach a balance between the two. Increasing our sensitivity to clients and animals is commendable, but we don’t wish to crash emotionally every time there is a drama in the waiting room or surgery. It obviously takes common sense to perfect, and even then it is arguable if anyone can perfect the art of emotional balance. It’s a daily practise of moving closer to our image of a better person, taken one day at a time.

**Recognising difficult clients**

The majority of clients (in the order of eighty percent or more) are affable and amenable to veterinary advice. Developing PR skills allows us to treat most clients with ease, but it is always the difficult ones which test our mettle. Oddly, I have usually found that even with difficult clients, it is usually not a problem relating to a veterinary procedure, but to do with our skills as a person. Thus if difficult clients are a challenge, they must be seen as a personal challenge rather than a veterinary one. Of course, some clients may be best avoided completely, and some will go elsewhere for their pet’s treatment, but it is a never-ending source of bewilderment that many difficult clients seem to prefer to stick with ‘the devil they know.’

Difficult clients, the ones who push our buttons, are our best practise for expanding our compassion. As the Dalai Lama remarks, ‘my friend, the enemy’ is about understanding compassion more deeply. Therefore, it may be best to equip ourselves with a little patience and self-awareness, and begin to explore what part of us is confronted by these clients. All of us have buttons which clients seem to be more aware of than ourselves, and one is always assured that until we know all the buttons work, we can never learn how to turn them off.

- **The omnipotent** - people who have a responsible job and have control over a lot of people. They are used to making all the decisions and don’t respect you. A patient and positive approach is necessary with such people. Rather than a force of will, which only leads to confrontation, such clients usually respect confident people and it may be best to be decisive and fully explanatory in your approach.

- **The omniscient** - the all knowing client who wants to know all the ‘ins and outs’ of everything. They insist you explain everything and give the impression that they completely understand, but never do and rarely listen to advice. Such clients can be difficult as there is a gulf between what we know and what they know, and short of allowing for the process of osmosis to work, or giving them a ten hour lecture on the medical process leading to diabetes, it may be best to give them hand-outs, write things down as pictorials and let me slowly appreciate the wisdom of your knowledge.

- **The omnipresent** - Clients who have lonely lives and look up to you as a god… they call you constantly over the smallest problems and seem to find you where ever you go. Loneliness - and its brother, depression - are endemic in western society. Statistics suggests it varies from ten to thirty percent of the population. For these people, a trip to the local vet or the hairdresser is as much a social occasion as a vaccination for their pet. Listening takes time and when you’re not in a hurry, is often all these people need. However, be aware that some people can be emotionally draining and you need to learn how to not get involved in their dramas. Remember that everyone will at one time or another in their life suffer from depression, even if we aren’t aware of it, so it
helps to realise that everyone can be in the same position as the lonely or the socially challenged. I often find that once someone gets to know you, it becomes easier to finally address their inner fears, and provide some brief advice, however guarded and cautious it may be.

- *The ignorant* - People who have a great disrespect for authority and cannot stand professional people, seeing us as heartless cash registers. Ignorant people come in three types - those that learn from their dramas, those that reluctantly learn and those that never do. There are always people who despise professionals of any sort, and such people are unavoidable and probably best avoided. Nothing more is available than to merely do what is required and leave them to decide their fate and their pet's.
Keeping an open mind

‘The greatest gift anyone can offer another human being is the gift of time. To give time necessitates love, compassion or duty. There is nothing given that does not contain time. And there is no other gift more priceless or timeless.’

Life was once explained to me by a philosopher as ‘an enigma within a paradox containing a conundrum.’ I spent a lot of time thinking about what he meant. I knew he must have known what he was talking about – judging by the long list of degrees after his name. The more I thought about it, the less close I felt to an answer. Then one day I stopped thinking about it, then Aha! – a moment of revelation arrived. It was like one of those Zen riddles. There was not meant to be an answer. Indeed, my friend wasn’t even asking a question. He was simply stating the inevitable. Comforted that I didn’t have to find an answer, I relaxed into knowing that I was happy just quoting him every time I was stumped about something. Life is a paradox, I would say, when a client asked me why something happened that shouldn’t have happened. I could answer their question quite confidently, in spite of my answer being another question. But that seems to be how life goes – perpetuation, generation after generation, unending questions, unending theories, unending hypotheses, and unending thoughts.

Most of us think far too much – in the order of 50,000 thoughts each and every day. If we consider that each thought has an associated emotion, that equates to 50,000 emotional changes daily. Fortunately our emotional pendulum tends to oscillate around an equilibrium, but its easy to see how a subtle catalyst can quickly tip us into anxiety, anger or depression. It’s not hard to understand familial depression or chronic anger post-abuse, where subconscious emotions tend to stew and result in inexplicable eruptions of emotions from time to time. It is not enough to try and think positive thoughts, because our habits of thinking, or ‘thought patterns’ are ingrained from an early age. What is essential to beginning emotional control is to first develop the skills of quietening the mind. This can be done by meditation or prayer, but formal techniques are not vital to getting to a state of mental stability.

Putting five minutes aside each day to relax, quieten the mind and process the emotions of the day is all that is required.

Certainly, meditation experts spend an hour or more each day to attain far greater skill at mental stability, but in a busy clinical life, five minutes a day every day is a good start. There are excellent books on meditation available in most book stores and reading on different techniques will help. Essentially they all work at getting a grip of our monkey mind. You may prefer to have a quiet place set aside, and play soft music to help you calm, but it can as easily be done while driving a car, mowing the lawn or painting a wall. The important element about meditation is doing it on a regular basis and working at it. If you wish to perfect the art of speying a dog, you practise. And with meditation, it is not different. It requires effort and practice. If you just want to sit and relax, then do so. Or if you want to jog ten miles to relax, that’s okay as well. But don’t confuse relaxation with meditation. One is mental torpor, then other mental activity.

Once the mind is stabilised, then emotions can be clarified, sorted and desensitised. We do not attempt to become emotionally numb through this method but to get control of our daily thoughts. And getting control of our thoughts is so vital to mental health that without it, physical disease as a result of chronic anger, anxiety and stress is inevitable. If your care about what you eat, then also care about what you think. You are what you eat, and you become what you think. No one can eat fried food morning noon and night and avoid atherosclerosis. Evidence for reversing arteriosclerosis arose in the 1980s and changed medicines approach to preventative health. Evidence for reversing chronic mental states emerged in the 1990s and has changed medicines approach to mental health.

You can avoid the obvious truths of science, but scientific truths will eventually have their way. No one can have angry thoughts all day and not become an emotional time bomb. The options are yours to decide. How you choose to approach your unique lifestyle and its successes and failures is...
uniquely your choice.

Descartes important proposition of ‘I think therefore I am’ merely refers to the ego, which has been explained earlier is merely the composition of conscious thoughts. What exists in a state of consciousness when thoughts are non-existent is not an existential dread or angst but an immutable state of awareness. This awareness, when cultivated, is a transcendent state of openness. Meditation experts compare this sensation to a vast ocean. They feel buoyant, and their mind has an openness to new ideas and feelings. Carl Jung referred to this immutable state of awareness as the Self, or spiritual aspect of humanity. If we pander to our existential ego, then inevitably this self-survival instinct cannot help us when we have to retire and abandon our wealth, our health and even our well-prized knowledge. Old age takes all except the essence of us. And death, unfortunately takes everything.

There is an old Buddhist saying that says ‘If you die before you die, then when you die, you don’t die.’ This simply means that when you cease to identify with anything that is not essential to you, then you are, in a sense, already dead. It means that you have chosen to die to the illusions, the illusions that you will live forever (the tricks of the body), that you are what you think (the tricks of ego), and that your mental concepts, ideas and habits are you. Liberating yourself from these things allows for true happiness, which is why the art of detachment is such a powerful way to inner freedom and peace. This image of ourselves which we see in the mirror is merely a reflection of what we want to see. Models look in the mirror and see only their faults. Macho men, even ugly ones, look into the mirror and see only beauty. Perception is determined solely by our ego. Without ego, there is only awareness (seeing from a non-judgement perspective). It not blind faith that makes us unhappy and stressed but blind belief

Even if we don’t believe in spirituality, or religion, it is difficult to ignore the fact that there is a fundamental aspect to ourselves which exists around or within our ego. This Self is immune to pain, to abuse, to taunting, to pride, anxiety and stress. It is the immutable gold of our essence that when we strive for it, gives us a meaning more profound than that found in a wallet, between the sheets, in our face on TV, or in the obituaries page. Strive to find that essence and if nothing else, your veterinary days will have more meaning, insight and impact on the next generation.

Mike George, in his book Learn to Relax quotes some fundamental steps to becoming more in-tuned with the inner Self. They include;
Be quiet – the greatest power is the power of silence
Let go – all suffering and sorrow have the same cause – attachment.
Let be – interference is futile, it only results in self-absence.
Listen in – the inner tutor is always available to you
Accept everything – resistance only strengthens and prolongs the struggle
Know yourself – know the ‘you’ who exists without your body, mind and ego
Pass on what you know – everything is for general use, not possession.
Meditation as a clinical tool

‘Only when you have no thing in your mind and no mind in things are you vacant and spiritual, empty and marvellous.’

Zen saying

There are a myriad of techniques available which describe the methods involved in meditation or prayer. Perhaps the easiest and most profound meditation is one that can be incorporated into our daily life, that doesn’t require an ashram or gilded statues. Meditation is about bringing the mind back to the present weightless moment, where the weight of the past and future are unable to perpetuate our conditioned anxieties and fears. What most people who meditate do is to use the body’s own metronome to keep their mind’s focussed on the present moment. The best metronomes are the heart beat and the rise and fall of the breath.

As you go about your daily activities, it is simply a matter of concentrating the mind onto the activity at hand. The thoughts which we have might go something like this:

“I am scrubbing my hands prior to surgery. I feel nervous. Let it go. I am scrubbing my fingernails. They are pink. They do not need clipping or polishing. They are how they are meant to be at this moment. The nurse calls me. The patient is ready. I am washing my hands under the tap. Breathe in, breathe out. I feel at one with the water rushing over my hands. There is no past. There is no future.’

‘I am picking up the scalpel. Breathe in, breathe out. The scalpel cuts through the skin. My hand takes a swab and dabs the incision. There is no appointment waiting for me, and if there is, it can wait. I am not looking forward to having lunch, to getting this finished to do something else. There is only ever this one moment to be happy. It is now or never. This is the meaning of my life, and its purpose. There is no higher calling for me but to be present right here and right now. There is no goal or prize or overcoming. There is only the ‘me’ that exists in this moment. The ‘me’ who is not my mind but a greater mind capable of joy, peace and equanimity. Day by day, breathing in and breathing out, I shall endeavour to better my sense of self that is timeless.’

As Surya Das once said in his book *Awakening the Buddhist Heart*;

‘If you strip away all the stories, beliefs and fantasies, and unveil our vital, pulsing, living core, here we are, right now. We are here for ourselves; here for each other – just here. There is a symmetry, a rightness, and justness to this elemental fact.’

As you grow in confidence with being aware of yourself, you begin to see things a little bit differently. The tensions begin to flow away. A smile breaks over your face. Nothing seems as urgent as before. Lean into this calm. Learn what it has to teach you, then pass it on. It is the best way to repay those who helped get you to this wondrous place of being a veterinarian.
1. Cherish the fortune of being alive, of having physical and mental health. You could be a three-legged dog with fleas.
2. Beware your strongest feelings - for those you love and hate - they are two sides to the same coin of the realm, attachment. Don’t play two-up games. The house always wins.
3. The sun shines on both rich and poor, wise and fool, straight and queer, brave and cowardly. And the worms are equally unselective.
4. Simplify, simplify, simplify.
5. Nothing is certain except wrinkles and senility. Life is not a sentence - it’s a noun.
7. Differentiate between animate and inanimate objects. Only one of them bites.
8. Do as you would be done by, or else be done over as you do.
9. Pleasing others is more pleasurable than pleasing yourself and thus more self-pleasing.
10. Cherish the fool, the knave, the enemy – they are your quickest teachers and slowest pupils – and your best inspiration.
11. Keep the faith, even when you fail. True scholars can always tell you the many pitfalls to avoid because they have falling into them so often. That’s why they are teachers.
12. Avoid feeding the flames of your’s and other’s emotions. Though in the beginning the warmth is consoling, eventually you’ll get burnt.
14. The greatest gift we have is time. Don’t make your gift a white elephant.
15. Practise compassion like you practise the piano - diligently. Remember, the ‘chopsticks’ aren’t a crowd pleaser, only a crowd teaser.
16. Be prepared to die in order to live, or to give up what you are to become who you want to be. It’s okay, a little death (loss of pride) never hurt anyone.
17. Philosophy, Ethics and Professionalism are essential to clinical life. Don’t save someone from drowning unless you can swim.
18. Where the heart goes, the mind and body follows. Avoid playing Dodge-’em cars with other’s feelings.
19. ‘Mirror, mirror, on the wall, who is the most reflective of them all?’ We cannot see in others what doesn’t exist in ourselves.
20. Speak ill only of the dead, and then merely in barely-audible and muted whispers.
21. We are the product of five million years of evolution and five minutes of sex. And we spend more time thinking about it than doing it.
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