

Science and spirituality: complementary or contradictory?

A personal journey into connection, by Helen Moore, Dec 2002

As I was starting to formulate several years' worth of thinking, reading and experience to illuminate even my own thoughts on this complex subject, I went by chance to visit a wise and soulful woman I know. She ended our visit by sharing some sad news with me. Yet, as I left feeling not saddened, but elated, I intuitively knew that there was a reason for our sharing having come to me at that moment - though I'd spoken not a word of my latest endeavour to her. Simply, I felt a mystical 'synchronicity'¹ behind her choosing that time to share the news; I also felt that my essay should begin with her story.

With tears springing to her eyes, the news my friend had shared with me was that her long-term partner had some few months previously been diagnosed with leukaemia. With a wan smile she explained that since it's at an early stage, the cancerous cells stood a chance of being healed. Though understandably very depressed by the diagnosis, her partner, with her support, is hoping to regress his illness not through mainstream medicine, but by incorporating a special diet, meditation, yoga and forms of alternative healing into his lifestyle.

Initially, of course, I was shocked and upset to hear news of this diagnosis; her partner is an apparently happy, fit and healthy man in his fifties. Yet as we talked about it, a transformation of our emotions took place. I recalled how her partner had approached me some weeks before, asking if he might come along to the Buddhist sangha² which I attend. Whilst knowing nothing of his illness, in welcoming him along to it, I'd noticed a different quality in him. Previously, I'd always felt a somewhat cynical streak in his character, but not having seen him for quite some time, I felt that it had somehow dissipated, that his energy was gentler, his spirit softer.

Interested in my perception, my friend admitted that she felt her partner's illness was actually a blessing. "He's been stuck for years," she said, "His illness is helping him grow." We smiled at this and I felt my heart burst open with happiness for them both. Before my eyes, my friend's face was also transforming with joy. "It's brought us so close," she said. "Recently I've had the happiest days of my life with him."

This attitude of hers resonated deeply with an idea that I too have come to believe - that illness is often the soul's path to growth. Herself a Louise Hay-trained therapist,³ who believes that cancers are often stress-related, my friend would doubtless have said something similar. Neither of our attitudes is conventional; nor are they 'scientific', according to the dictionary's definition of science⁴; nor have our attitudes been acquired

¹ Synchronicity – this is a concept developed by Carl Jung. It involves the relationship of the unconscious mind and 'matter', a relationship which I will touch on in the course of this essay. The concept basically means a "meaningful coincidence" of inner and outer events that are not themselves causally connected. Such meaningful coincidences Jung found to be accompanied by the activation of an archetype in the unconscious of the individual concerned. Cf. Jung, Carl: *Man and his Symbols*, Arkana, 1990, p. 211.

² Sangha – community of Buddhist practitioners meeting to meditate together etc.

³ Louise Hay has a holistic approach to healing body/mind/spirit. Cf: *You can Heal Your Life*, London, 1999.

⁴ Science: knowledge ascertained by observation & experiment, critically tested, systematised & brought under general principles [Chambers Dictionary, 1993 edition.]

from the dominant Western culture shaping our belief systems. In fact, how I've come to this belief, with a background influenced by late twentieth/early twenty-first-century Western culture, will inform this essay through the course of which I will explore my own spirituality and its potential compatibility with science.

Of course, even at the outset, my thoughts about spirituality hit against an obstacle - modern, Western science doesn't even recognise the existence of the soul! Instead, it's a realm left to religion, although, brought up in the Church of England, I personally never heard such matters discussed within its hallowed confines. (It was in my early twenties, when someone casually asked me if I thought I had a soul, that led me to first consider the matter!) Religion, like everything else, including science, as I will show, is shaped by culture, evolving to reflect contemporary collective consciousness, and, I believe, after Carl Jung, unconsciousness. In the history of Christianity, the Reformation, Counter-Reformation and the modern rise of fundamentalism are all examples of how dogma, and the form that worship takes, are influenced by the society and culture in which they reside. My exploration of the possible overlap between science and spirituality will therefore not touch on any one religion per se, but on something more eternal - what Matthew Fox⁵, a 'post-denominational', American priest, terms 'the essence of all religions' - spirituality. Drawing on the writings of mystics - Christian⁶, Sufi and Hindu - it was their descriptions of the direct communion with God/the Divine in an elevated state of ecstasy that helped him break out of what he felt to be the strictures of his Dominican training.

So what is 'spirituality'? Confusingly, my edition of 'The Chambers Dictionary' defines it as 'the state of being spiritual', and 'spiritual': "of the nature of, relating to, spirit, a spirit, spirits, the mind, the higher faculties, the soul." Its definition of 'spirit' is even more nebulous: "vital principle; the principle of thought; the soul; a disembodied soul; a ghost; an incorporeal being." In the end, I felt less enlightened than before I looked them up, but this is not the fault of any lexicographer - our culture has a highly ambivalent relationship with all that's spiritual. For instance, although the paranormal provokes endless popular fascination, it's never taken seriously by the scientific establishment. In the modern fields of psychology and parapsychology, some of these phenomena have been put to the rational, 'objective' scrutiny of the scientist; however, these fields themselves are not mainstream areas of scientific exploration and are still subject to misunderstanding and ridicule by the wider scientific community.

Nevertheless, according to Rupert Sheldrake⁷, a biologist much interested in the spiritual, 'soul' is that 'vital principle', "the animating principle, that which makes living things alive." In fact, the Latin word for the soul is 'anima', from which we derive both 'animal' and 'animate'. For a very long time, all creatures and plants were believed to possess a soul; even the cosmos had its 'anima mundi'. In plants and animals Aristotle saw the soul's function as a sort of formative principle, pulling the acorn, for example, towards its final form as a mature oak tree. In the New Testament, the true man is seen as a seed: 'God giveth it a body... and to every seed his own body.' (Corinthians 15:38) Whilst in the Upanishads the Divine is seen as both 'Inner Controller' and the soul:

"He who, dwelling in all things,
Yet is other than all things,

⁵ cf. Sheldrake & Fox, '*Natural Grace: Dialogues on Science and Spirituality*', 1996.
And Fox, M: '*The Makings of a Post-Denominational Priest*', 1996.

⁶ Notably Meister Eckhart.

⁷ Sheldrake & Fox, p. 65.

Whom all things do not know,
Whose body all things are,
Who controls all things from within –
He is your Soul, the Inner Controller,
The Immortal.”⁸

Could the notion of the soul be of any concern to other scientists, I began to wonder? Surprisingly, it would seem that historically, at least, it has. Since time immemorial science has sought to understand the essential nature of things - in ancient Greek ‘physis’ means precisely this. As physicist Dr. Fritjof Capra explains⁹, the roots of all Western science are to be found in the first period of Greek philosophy in the sixth century BC, amongst the sages of the Milesian school in Ionia, “in a culture where science, philosophy and religion were not separated.” He also points out that such a quest is common to all mystics. The Milesians themselves were called ‘hylozoists’, or ‘those who think matter is alive.’ Amongst the medieval European alchemists, who were influenced by Aristotle’s notion of a ‘prime matter’ - an unchanging reality behind the ever-changing material world - the scientific and mystical quests were one and the same: the transmutation of base matter and base spirit into real or symbolic gold. “The alchemist was trying to make the soul progress from its ordinary state to one of spiritual perfection.”¹⁰

I found it interesting to note with the alchemists, many of whom influenced modern branches of medicine and science, such as Paracelsus, all knowledge was regarded as a unity leading toward a greater understanding of the Universe. Medicine, religion, philosophy, alchemy, logic, astrology, astronomy and magic were all complementary fields of study, a very different state of affairs from the mainly mono-disciplinary nature of modern knowledge.

Unwittingly perhaps, it would seem that Paracelsus himself contributed to the schism between mystical and material planes of human consciousness by separating out the practical and mystical endeavours of alchemy. Philosophical thought thereafter developed this spirit/matter dualism more extremely and was famously formulated by Descartes, (himself interested in alchemy), in his view of nature as fundamentally divided into two separate realms: the mind (*res cogitans*) and matter (*res extensa*). As Capra explains: “The ‘Cartesian’ division allowed scientists to treat matter as dead and completely separate from themselves, and to see the material world as a multitude of objects assembled into a huge machine.”¹¹

Making nature inanimate, Rupert Sheldrake perceives Descartes as having withdrawn the soul from nature, from all animals and plants, and from the human body as well. Capra also indicates the extent to which this has continued to influence Western thinking: “Descartes’ famous sentence: ‘Cogito ergo sum’ – ‘I think, therefore I exist’ – has led Westerners to equate their identity with their mind, instead of with their whole organism. As a consequence of Cartesian dualism, most individuals are aware of themselves as isolated egos existing ‘inside’ their bodies.”¹²

Nearly four hundred years later this phenomenon was certainly one which shaped me as a child. At school in the 1980’s, I mechanically learnt about Newton, atoms,

⁸ Brihad-aranyaka Upanishad, 3.7.15.

⁹ Capra, Fritjof, ‘The Tao of Physics’, 1992, p24.

¹⁰ Powell, Neil: ‘Alchemy, the Ancient Science’, 1976.

¹¹ Capra, p27

¹² Sheldrake discusses a little known strand of biology called ‘vitalism’ which ran counter to the mechanistic theory of life until the 1920’s. It was a doctrine that believed that all living organisms are truly alive – cf. Sheldrake: ‘Seven Experiments that Could Change the World’, 1994, p.8.

magnetic fields and iron filings, as if they were items on a shopping list to be memorised and for some inexplicable reason, carried forth into life. In biology, I listened to descriptions of the molecular structures of organisms, the reproduction of sticklebacks and the bloody, spongy walls of the human uterus – which, almost incidentally, I realised I had inside me. Once or twice I dissected frogs and mice with a repulsion that came more from squeamishness than anything else. I was simultaneously repulsed by what I perceived to be the soulless piety of the local priest and congregation at the church I attended each Sunday, and so, by the age of sixteen, was done with both science and religion. Neither of them seemed in the least bit relevant to my life.

Despite my academic success at university studying literature, as I grew into my twenties, I was very unhappy deep down - a state which, like most of my peers, I drowned out through a hedonistic lifestyle. What was Life all about? I didn't feel I knew; certainly, my long years in education had taught me little that I felt was useful. Nevertheless, I was fortunate in that at an early stage I'd settled on my path in life as a writer; also that I was exposed to the notion of Renaissance Man, rounded in all branches of knowledge, which in many cases would have included alchemy. In a fit of feminist fervour I decided that this model of knowledge, denied to my predesisters, was mine to reclaim. Feeling that I knew nothing about world religions, and despite being at times ridiculed for 'becoming a mystic' by a friend, who quoted Marx at me: 'religion is the opium of the masses', I embarked on that vast topic.

I voyaged across many fields, through many seas. Perhaps inevitably as a writer, I was predisposed to introspection, and so began examining myself, my own beliefs, why I'd come to think what I did. I began to see that many people, including my family, simply reiterated the same old belief-system over-and-over again. Some of those beliefs, such as gender roles, had always impinged on my freedom to be myself and so had found myself challenging them. I was also fortunate in that I often picked up so-called 'New Age' self-help and spiritual books, which were becoming hugely popular through the nineties, and many of which were useful in supporting this process of questioning.

A great deal of my focus soon turned to my own body, mainly because I hated it and had developed an eating disorder. I took a course called 'Your Body to You', which tuned me into the 'wisdom' of the body, the messages I could intuit if only I listened. I came to understand that our bodies are cultural concepts, deeply shaped by our cultural attitudes towards them. In reading the work of a holistic physician trained in obstetrics and gynaecology, Dr. Christiane Northrup¹³, I came to understand that beliefs are physical.

She writes: "A thought held long enough and repeated enough becomes a belief. The belief then becomes biology.... If we don't work through our emotional distress, we set ourselves up for physical distress because of the biochemical effect that suppressed emotions have on our immune and endocrine systems."¹⁴

Unpacking my familial and cultural beliefs around menstruation, I came to understand that the reason why I suffered so greatly from dysmenorrhoea was no doubt deeply connected with generations of men and women in my family whispering about it as 'The Curse'. Through deep visualisation work and re-evaluating my own beliefs, I was surprised at how quickly I was able to heal myself of my monthly discomfort.

¹³ Northrup, C: 'Women's Bodies, Women's Wisdom – the Complete Guide to Women's Health and Healing', 1995.

¹⁴ Ibid, p33.

My experiences and explorations soon took me further into the realm of the interaction of mind, or more wholly, the psyche (including the unconscious through my dreams) and matter. I became particularly interested in Eastern mysticism and its traditional understanding of body, which is not separate from the mind. The various subtle body systems interested me, especially the Indian chakra system¹⁵. I started practising yoga and pranayama¹⁶, learning that through the control of my breath I could activate 'prana', the energy believed to flow through subtle body paths.

Auras fascinated me too. Even if the notion of a person having an aura is difficult to grasp, I was at least familiar with the depiction of Christ with a shining light around him, a halo around his head. Although I seem to have no aptitude for seeing them myself, I read that they are frequently reported as having been seen in clairvoyant visions by mediums, healers and shamans. In exploring shamanism further (both experientially and through books), I was fascinated to discover from Michael Harner in *The Way of the Shaman*¹⁷ that amongst the Jivaro Indians of the Ecuadorian Andes, the shamanic state of consciousness is described as a state of ecstasy, akin to that of the mystic. One Jivaro shaman depicted another shaman in a simple line drawing with a many layered halo extending from around his head.

From his own explorations of both Western and Eastern mystical traditions, psychologist Arnold Mindell¹⁸ sees correspondences between the various subtle body systems, such as auras, chakras and 'nadis'¹⁹, and also in the early European concept of the human body as a map of the universe, with different parts governed by different planets. These systems he perceives as manifestations of what he calls the 'dreambody', which is a subtle intertwining of its two aspects: the real body and subtle body, spirit or soul. And after the ground-breaking work by physicist Fritjof Capra, *The Tao of Physics*, first published in the 1970's, Mindell also makes a connection between his concept of the dreambody and that of modern-day quantum physics, the quantum field.

To understand this, my grasp of school-book physics was not sufficient; I had more reading to do. The mechanistic model of Newtonian physics, which was so widely accepted by the nineteenth century that its laws of motion (solid bodies moving in empty space) were seen as the basic laws of nature²⁰, and which had informed my schooldays, had actually come unstuck some hundred years previously. Through Faraday and Clerk's discovery of electric and magnetic phenomena, that the mechanistic model could no longer describe, the Newtonian paradigm was then successfully shattered by two further developments at the beginning of the twentieth century: the theory of relativity and of atomic physics.

Interestingly, Einstein, the father of this scientific revolution, believed in nature's inherent harmony and his deepest concern was to find a unified foundation of physics. Out of his and others' work grew quantum theory, which Capra describes thus:

¹⁵ Chakras – vortex centres of energy, often described as being like lotus flowers, arranged vertically between the crown of the head and the root, at the base of the spine.

¹⁶ Pranayama: yogic breathing discipline.

¹⁷ cf. Harner, Michael: *The Way of the Shaman*, Harper San Francisco, 1990, p.21.

During a shamanic journey, it is believed that the shaman's soul leaves his body and ascends to the sky or descends to the underworld in order to heal himself or other members of the community.

¹⁸ Mindell, A: *'Dreambody: the Body's Role in Revealing the Self'*, 1984

¹⁹ Nadis – subtle arteries extending beyond the body.

²⁰ "In the Newtonian view, God had created, in the beginning, the material particles, the forces between them, and the fundamental laws of motion. In this way, the whole universe was set in motion and it has continued to run ever since, like a machine, governed by immutable laws." Capra, p.65.

"Quantum theory... reveals a basic oneness of the universe. It shows that we cannot decompose the world into independently existing smallest units. As we penetrate into matter, nature does not show us any isolated 'basic building blocks', but rather appears as a complicated web of relations between the various parts of the whole. These relations always include the observer in an essential way. The human observer continues the final link in the chain of observational processes, and the properties of any atomic object can only be understood in terms of the object's interaction with the observer."²¹

Further developments in modern physics eventually merged 'electrodynamics' (the evolution of Faraday and Clerk's discovery of electric and magnetic phenomena) with quantum theory into 'quantum electrodynamics', combining the concept of the electromagnetic field and that of 'photons', the particle manifestations of electromagnetic waves, which are themselves manifestations of electromagnetic fields. Capra writes: "In these 'quantum field theories', the classical contrast between the solid particles and the space surrounding them is completely overcome. The quantum field is seen as the fundamental physical entity; a continuous medium which is present everywhere in space."²² A concept of nature that rings many bells in Eastern mysticism²³, and echoes Aristotle's notion of 'prime matter' as: 'an unchanging reality behind the ever-changing material world'.

With this in place, I returned to the parallels that Arnold Mindell sees in his concept of the dreambody and the quantum field. He writes: "The flow and rhythm of the dreambody constitute a 'field' experience, to use a term from physics. The field is a definite sensation of one's self as a process with only vague extremities in time and space. In contrast, the real body can be defined as an object with a certain weight, temperature, etc."²⁴ Mindell also sees parallels in the Chinese concept of 'chi', or the yogic 'prana', and the field idea. Quoting Capra, he compares it to the quantum field in its conception as a "tenuous and non-perceptible form of matter which is present throughout space...."

Suddenly my vision of nature was radically changed. It was post-mechanistic and I realised that that no one and nothing is separate. We are all inextricably linked in a vast web of life beyond our comprehension; Nature cannot be reduced to the sum total of her parts; somehow, that mysterious flap of the butterfly's wings was making sense. Ultimately, I saw that Life is fundamentally mystical, a shifting, subtle myriad of animate interconnectivity. But whilst this deep compatibility between science and spirituality was exciting to discover, two perturbing realisations were simultaneously emerging for me.

Firstly, the idea that the rediscovery of an animate nature seems hardly to have filtered through to the majority of scientists, most of whom are still operating on an entirely materialist plane. And secondly, despite my experiences, much of my discovery was still purely intellectual and was not lived experience. For me it was essentially a dark night of the soul. I was suffering from depression, which was intermittently suffused with ecstatic experiences when I felt that I had somehow transcended my ego consciousness and was connecting with what I felt was my Higher Self, or divine nature. Most of the time, however, I experienced myself as still deeply bound by Cartesian dualism that shaped my day-to-day experience of my body; of

²¹ *ibid*, p.78.

²² *ibid*, p.233.

²³ *cf. The Tao of Physics* for a thorough study of the parallels.

²⁴ Mindell, p. 16.

course, it's difficult not to be when this is what informs most of science, religion and the majority of the world around me as well.

Of contemporary, academic biology and medicine, Sheldrake writes "[they] are still under the sway of the mechanistic world-view, and seem to be living fossils of an older mode of thought."²⁵ Given the modern pre-eminence of biology and its seeming desire to explain human nature, particularly through genetics, and its related application, biotechnology, I found this to be both surprising and alarming. Mapping the human genome, cloning, genetically modified organisms, nanobots, xenotransplantation: it would seem that biologists are still in thrall to a vision of themselves as gods tinkering with inanimate machines. Laboratory animals are certainly regarded as such, with hundreds of thousands used every year for often pointless experiments.²⁶ Most surprisingly, I find, there is no regard for the effect of the disturbed psyches of these animals on any of the experiments. Seemingly, the result of being kept in tiny prisons and subjected to limitless tortures does not impinge on their bodies and cannot therefore undermine the supposed efficacy of these experiments.

Unlike Charles Darwin, who was himself an amateur naturalist, most modern scientists are not able to independently fund themselves and rely on grants and funds to support their work. Many even own their own companies; and so, given the intimacy of this modern relationship between business and biology, it's easy to see how Capra connects its pursuits with global capitalism. He says: "The overriding motivation for genetic engineering is not the advancement of science, the curing of disease or the feeding of the hungry. It is the desire to secure unprecedented financial gain."²⁷

Modern science is also anachronistic in its rigid adherence to the notion of scientific objectivity. Despite quantum theory's understanding of the role of human observer in observational processes, (what a parapsychologist might term the observer's psychic influence) most scientists remain deeply attached to the notion that they are able to observe phenomena objectively. In her essay 'Science and the Unconscious'²⁸, Marie-Louise von Franz discusses physicist Wolfgang von Pauli's work in studying the role of archetypal symbolism (arising from the unconscious mind) in the realm of scientific concepts. Pauli believed that we should parallel our investigation of outer objects with a psychological investigation of the inner origin of our scientific concepts.

In her fascinating essay, 'Colonising the Social Sciences', Hilary Rose²⁹ also examines the way in which Darwin was influenced by the dominant social values of the time in the writing of *Origin of the Species*. These included colonialism (Darwin had witnessed the genocide of the Tierra del Fuego Indians) and Malthus' 'Essay on the Principle of Population', which argued that the growth of human populations inexorably outstripped the available food supply, an argument that shaped the idea of 'survival of the fittest', and one that informs the pro-G.M.O. lobby today.

Throughout this essay I have deconstructed my personal belief-system and outlined my consequently unfolding spiritual development; in now moving towards my conclusion, I would like to widen out the implications of this process to suggest that if science and spirituality are to be truly compatible, the scientist must embrace the old maxim: 'Know thyself'. I still find it impossible to understand how scientists can hope

²⁵ Sheldrake, p.18.

²⁶ cf. publications by BUAV (British Union for the Abolition of Vivisection)

²⁷ Capra, Fritjof: '*The Hidden Connections: a Science for Sustainable Living*', Harper Collins, 2002, p.140.

²⁸ cf. Jung, p. 304.

²⁹ Cf. Rose, Hilary & Steven: '*Alas Poor Darwin: Arguments Against Evolutionary Psychology*', Vintage, 2001.

to understand the essential nature of things if they aren't aware even of the basic influences which are shaping their experiments, of the paradigms within which they themselves are operating. How can anyone truly advance knowledge if he or she isn't integrating science with a deep knowledge of themselves?

I have shown how the subtle body systems relate to quantum fields and the spiritual notion of the soul. From my personal anecdotes, I also have pointed up some of the difficulties faced by an individual raised in the West in realising themselves beyond dualism and materialism. Still, I find myself feeling my way in the dark; instinctively we may know when someone or something appears or feels 'soulless', but how does matter become suffused with soul? I'm still grappling with this question; nevertheless, I believe that in the case of human beings, embarking on a journey of self-knowledge and spiritual quest is likely to be the best way to discover the answer.

Aristotle spoke of the soul's function as being the formative principle in plants and animals and uses the image of the acorn growing to maturity. Marie-Louise von Franz uses a similar image of the seed of a mountain pine falling at a certain time onto a certain place. "Thus, an individual pine slowly comes into existence, constituting the fulfilment of its totality, its emergence into the realm of reality."³⁰ She likens this with what Jung called the individuation process in human individuals, the goal of which she sees as being, like the pine seed, "the realisation of this uniqueness in the individual man..."

This individuation process I see as being at the heart of spirituality and can be tied in with an evolution through understanding and opening the subtle body system of the chakras.³¹ Carl Jung explains the human psyche as being in entirety 'the Self'; however, at the beginning of our individuation process, we only dimly perceive that level of ourselves. Instead, we are much more attached to ego consciousness. Initially we are also very much shaped by our upbringing, our parental influences, our gendered selves, our socialised selves – in short, our conditioning. Starting the individuation process involves coming to see how and where our ideas about ourselves and the world come from. It involves beginning to recognise and own our faults, our unconscious (manifest in our dreams) and our 'shadow' side, which an undeveloped person otherwise projects out onto the world and onto others.

Integrating the shadow side is especially important, as it frees us from the tyranny of the ego. Of course, we are never completely free of our ego's neuroses etc (until we are truly enlightened beings). Nevertheless, we can at least develop an awareness – or in Buddhist terms, 'mindfulness', of ourselves. This way we can start to act consciously, not just in a reactive way to the whims and impulses of ego. Individuation also involves freeing ourselves from fears that prevent us from being our true selves and integrating our masculine and feminine sides, at a level beyond gender. This way, we can become whole beings, able to open ourselves to Life's wonder and unexpectedness, its richness, its sorrows, its joys.

In this way we will not be mere puppets aping the way our parents and previous generations have acted, but can be conscious of ourselves, of each other, of the consequences of our actions for ourselves, for others and for our planet Earth. Ultimately, I believe, through the practice of self-awareness and spiritual disciplines that connect us with body/mind/spirit – such as meditation, yoga and Tai Chi – we can connect with the mysteries of the Great Spirit that infuses all Life. Such a path allows us to open our hearts and consciousness to deep compassion, to magic, to Beauty, to

³⁰ Cf. Bittlinger, Arnold: *'Archetypal Chakras'*, Weiser, 2001.

³¹ Cf. Bittlinger. And Myss, Caroline: *'Anatomy of the Spirit'*, Bantam, 1996.

unconditional Love. Ultimately, I believe it can unite the quest of the scientist and the mystic in understanding the essential nature of things and in a harmonious relationship with Nature and with the interconnectivity of all Life.