Integrated Intelligence and the Psycho-Spiritual Imperatives of Mechanistic Science

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Abstract

This paper explores four underlying psycho-spiritual imperatives which drive mechanistic science, and how these have led to the depiction of consciousness as mechanistic, brain-based and localised. The consequent rejection of integrated and transpersonal depictions of consciousness is examined in particular.

General Introduction

The dominant contemporary paradigm of science has been described as the mechanistic paradigm by various critics. (Capra 2001; Davies & Gribbin 1992; Fox & Sheldrake 1996; Goerner 2004; Grof 1985, 1992, 2000; Hawkins 2002; Kafatos and Kafatou 1991; Laszlo 2004; Panek 2000; Ross 1993; Sahtouris 1999; Sardar 1998; Sheldrake et al. 2001) This paradigm sees the universe and all that is in it as essentially machine-like, and operating according to predictable and deterministic laws. Its fundamental precepts include materialism (Davies & Gribbin 1992), the reification of the random, and reductionism. (Bloom 2001) In mechanistic science, and in cognitive psychology, neuroscience and artificial intelligence theory, consciousness is most often reduced to the status of epiphenomena – an accidental by-product of random evolutionary forces. (Chalmers 1997; Grof 2000; Moody 1994) It is thus generally assumed that consciousness emerges from the micro-functions of the brain. Nonetheless, following the general tenants of transpersonal psychology (Gebser 1985; Grof 2000; Hawkins 2002; Walsh & Vaughan 1993; Wilber 2000a, 2000b, 2000c, 2001) and mystical experiences (Bucke 1991; Jacobson 1999; Nisker 1998) it will be argued below that consciousness can be fragmented into an isolated ego-based mind, or expanded into an ego-transcending integrated intelligence.[1] This dichotomy forms the basis of the integrated/fragmented model of mind.

Within this essay, the transpersonal and cosmic depiction of consciousness will be described as "integrated intelligence". As is typical of the method of deconstruction, both the explicit and hidden components (including presuppositions) of the dominant discourse will be made visible, the "silenced" voices will be made audible, and the privileged discourse will be identified. (Inayatullah 2002a: 27)

The primary purpose of this paper is to identify how four underlying psycho-spiritual imperatives which underpin dominant mechanistic representations of science and consciousness, have led to self-limiting constructions of mind, and a reduced range of perceptual modalities in contemporary science and the western world in general. These imperatives are:

1. The dualistic nature of the scientific method, in particular its separation of observer and object/subject.
2. Mechanistic science's tendency towards power and control over nature.
3. The patriarchic and "hard" basis of mechanistic science.
4. The influence of ego-level consciousness and the drive towards separation and narcissism.

While the identification of these imperatives has been well covered by previous researchers, this paper attempts to clarify their relationship with ways of knowing and especially integrated intelligence.

What is Integrated Intelligence?

Integrated intelligence is a transpersonal intelligence that transcends the boundaries of the individual.[2] It is in effect a collective human and universal intelligence. Historically it has most commonly been depicted in spiritual and mystical texts and forms a part of all mystical traditions. As Dossey (1999) writes:

> *The idea that the human mind is infinite or nonlocal - at at some level it cannot be confined to specific points in space, such as the brain and body, or in time, such as the present, is ancient.* (Dossey 1999)

Just a few examples of integrated intelligence include Sarkar's cosmic mind (Inayatullah 2002b); Chardin's omega point (de Chardin 1976); Lao Zi's Tao (Jiyu 1998; Zhengkun 1995); Meister Eckhart's "eye of God" (Lang 2004); Dossey's non-local awareness (Dossey 1999, 2001); and the "cosmic consciousness" of Bucke (1991) and Kubler-Ross (1997).

Integrated intelligence, as defined here, is comprised of two distinct domains. The first is higher order perceptions of the wholeness and integration of the cosmos; what Ken Wilber calls the subtle, causal, and non-dual aspects of consciousness. (Wilber 2000a, 2000b, 2000c, 2001) This is the direct experience or perception of the integrated nature of the universe and consciousness. Domain two integrated intelligence includes the experience and/or deliberate employment of various "paranormal" and "psychic" perceptual phenomena such as ESP, clairvoyance, and transcendent visionary experience.

Representations of Consciousness

Six Types of Representations of Consciousness

The discussion on the psycho-spiritual derivatives of the mechanistic paradigm which follows incorporates six kinds of representations of mind into its considerations, thus encapsulating the civilisational and other ways of knowing that are crucial to a more inclusive understanding of the world. (Broomfield 1997; Bussey 2000; Inayatullah 2002a; Sardar 1998; Wilber 2000a 2000c)

Type 1. Indigenous

Many indigenous cultures held (and many still hold) strong beliefs about the integrated nature of human consciousness and the universe. Indigenous cultures employed a type of integrated intelligence in their healing practices. Australian Aborigines lived an integrated intelligence called The Dreaming, which included assumed telepathic potentials and perception of the spirit of a places. (Lawlor 1991) Other premodern and indigenous cultures believed in a transpersonal healing energy. These included the "mana" of the Hawaiians, the "orendam" of the Iraquois, and the "megbie" of the Ituraea pygmies. (Pearsall 1999: 59)

Shamanism, a common practice within indigenous cultures, features a strongly held belief in integrated intelligence, including communication with nature, gods and spirits. (Grof 1994, 2000; Walsh 1990) A connection with the forces of nature and the supernatural realms are strong features of shamanism. (ibid.)[3]

Type 2: Ancient and Medieval

Many ancient cultures had strong beliefs in gods and various psychic potentials of human beings. Strongly transpersonal aspects can be found in the cultures of the ancient Greeks, Buddhism, Taoism, The Kabbalah, Tibetan Vajrayana, Sufism, Christian mysticism, the various forms of yoga and many others. (Grof 1985, 1994, 2000) The ancients employed tools such as prayer, breath control, meditation, and movement meditation for inducing non-ordinary states of consciousness, which are closely associated with integrated intelligence. (ibid.)

Aspects of integrated intelligence continued throughout the Middle Ages. Gnostic Christianity and mysticism not only saw gods and the divine in nature, but encouraged the development of personal spiritual experience as a source of knowledge. (Ross 1993: 41) The writings of mystics Dionysius the Areopagite, St. Thomas Aquinas and Hildegard of Bingen reveal their belief in the existence of a hierarchy of consciousness, incorporating humans, angels and divine consciousness. (Fox and Sheldrake 1996) The premoderrn era thus recognised the Great Nest of Being, the hierarchies of knowledge of the cosmos ranging from mundane to divine. (Wilber 2000a: 64-65)

Type 3: The Mechanists

In the wake of the enlightenment rejection of the concept of inner stages of consciousness (ibid: 65), modernist thought tends to posit intelligence and consciousness within mechanistic and localised dimensions. Thus mainstream depictions of consciousness (within psychiatry, cognitive psychology, artificial intelligence theory, the general modern debate on consciousness, biological science etc.) mostly fall into this category. Quite often modernist science fails to acknowledge consciousness at all, preferring to focus upon empirical and measurable aspects of consciousness such as behavior and neuro-physiology. (Blackmore 2001; Capra 2000; Grof 1985, 2000; Ross 1993) Within these texts rational and empirical tools predominate. Statistical and normative analysis is common, such as factor analysis. Psi phenomena, including integrated intelligence are usually ignored, and often ridiculed by proponents of mechanistic consciousness. In Wilber's terms, for modernity, interior stages of consciousness have been "dismissed as so much superstitious nonsense." (Wilber 2000a: 65)

Type 4: Postmodernist and Poststructuralist

Poststructuralism can be considered an aspect of Postmodernism, and thus the two will be discussed together here. Postmodernism retains the detachment and intellectualism of type three texts, but probelmatises the epistemological foundations of science and knowledge in general.

The postmodernists' methods – analysis, genealogy, distancing, deconstruction – are reductionist methods which break things into their constituent components, and solidify the observer and object/subject split which proponents of integrated intelligence see as necessary to transcend for deeply intuitive perceptions to occur. (Broomfield 1997; Dossey 2001; Hayward 1984)

While postmodernism explicitly allows for the inclusion of the idea of vertical dimensions into its discourse, by implication it illegitimates the very vertical space that it welcomes. Within postmodernist thought the vertical and hierarchical dimensions of integrated intelligence can only be incorporated within the pluralistic relativist postmodernists' map; and a pluralist relativist map necessarily extinguishes hierarchies and vertices. Thus postmodernism implicitly rejects such vertices within the space it deconstructs, and perpetuates the modernists' rejection of hierarchies of consciousness. (Wilber 2001)

Type 5. Critical spirituality [4]

Within type five texts, integrated intelligence is acknowledged theoretically, or even incorporated into the map, but without extended experiential references or an adequate range of effective tools that might facilitate the employment direct personal understanding of integrated intelligence. At a practical level integrated intelligence thus remains an aside to the dominant rationalist discourse, but with increasing relevance.

As with postmodernist thought, in critical spirituality epistemological perspectives are introduced, including references to the problematics of science and consciousness theory. Rational methods still predominate, however there is an increasing employment of mythology, and theoretical and experiential examinations of other ways of knowing. There is often acknowledgement of integrated intelligence, some of it based upon inner work or intuitive perceptions, and some based upon theoretical extrapolations. Generally speaking, to use Wilber's (2000a) terms, there is a lack of the actual employment of the interior/collective cognitive modes. Numerous futures texts tend to fall into this category, such as those of Inayatullah. (2002a 2002b); Sardar (1998); and Wildman (1997).

Type 6: The Mystics

Type six texts are those texts that focus upon spiritual and mystical subject matters, and tend to rely heavily upon esoteric and spiritual methodologies, Wilber's (2001) "eye of spirit". Type six texts incorporate three sub-groups.

The first of these is populist new age texts. These feature a strong tendency to valorise the spiritual, and in particular psi and so called "paranormal" phenomena. Rationality is played down, or even demonised. New Age texts tend to valorise spirit mediums and channeling. (Kubler-Ross 1997; Myss 2001; Walsh 1999) Concepts such as angels, nature spirits and UFO's – anathema to type three "mechanistic" texts – are also commonly referred to in new age and "non-dual/critical" texts. (Fox and Sheldrake 1996; Mack 1999; Wilde 2001) An important feature of the new age is the focus upon the psychic (domain two integrated consciousness) and not upon the truly transcendent domains of consciousness (domain one integrated consciousness). As the new age has extensive experience with these domains, it is reasonable to assume that it may be a valuable source of knowledge in this respect.[5]

The second sub-group includes the "non-dual/critical" texts. Texts within this sub-group employ an expanded array of spiritual/consciousness tools over type five texts, such that integrated intelligence is valorised *above* rationality. Rational tools are still employed, but they are generally viewed as limited in their uses. Texts of this kind report a breakdown of observer and object/subject dichotomies in perception, but by necessity communicate via "rational" means (written texts, language, scientific research etc.).

Non-dual/critical texts strongly retain elements of rational discourse. They are primarily texts written by practicing or former academics, professionals and intellectuals. They tend to incorporate scientific data and logical analysis into their discussions, but emphasise the limitations of such tools, and see intuitive knowledge as transcending the rational. (Bussey 2000; Hawkins 2002; Nisker 1998; Wilber 2000c)

The third sub-group within type six texts is the "non-dual/mystical" texts, in which domain one integrated intelligence and the spiritual are valorised, whilst both domain two integrated intelligence, and intellectualisation in general are seen as being of limited value, or even as obstacles that lie in the path of "enlightenment". Observer and object/subject dichotomy collapses, and an array of consciousness tools are employed to facilitate non-ordinary states of awareness, such as meditation, dance, chanting etc. (Bucke 1991; Jacobson 1991, 1999) These texts span the full spectrum of Wilber's model, with common emphasis upon expanded non-dual states of consciousness.

The Integrated/fragmented Mind Model

Definition

The integrated/fragmented mind model follows mystical and transpersonal theory/experience (Gebser 1985; Grof 2000; Wilber 1999, 2000c) which states that there are both rational/ego-based and transrational states of mind driving human evolution. In Wilber's and Gebser's models (ibid.), consciousness evolves from pre-personal and undifferentiated modes, through to rational and ultimately to transpersonal modes.

As used here, the term "the integrated

mind" features the conscious mind in awareness of its essentially non-localised and universal nature. Concurrent with this is the experience or knowledge of externalised "influences" on the mind, including mystical, deific, spiritual and stygian.

Fragmented consciousness, by implication, is the state whereby the conscious mind is unaware of its non-localised, transpersonal nature, and is dissociated from any genuine awareness of universal or spiritual consciousness. It is characterised by the mind's drive to perpetuate its state of separation, by a need for control and power, and to deny death and impermanence. (Grof 1995; Krishnamurti 1987; Wilber 1999, 2000c)

Wilber's (2000a) model specifies four quadrants of mind. The four quadrants incorporate the individual/collective, and the interior/exterior aspects of consciousness. Using Wilber's map, it can be seen the depictions of consciousness in western texts in the modern era have tended to exclude the interior and the collective. This is the domain of integrated intelligence, the awareness of knowledge of the transpersonal as experienced via an inward focus of mind. Yet the purpose of this paper is not only to discern the *representations* of mind within modern texts, but also the actual dominant *manifestation* of the fragmented mind in modernity, and especially the psycho-spiritual factors which have greatly contributed to this dominance. For it will be argued that the representation of mind as essentially mechanistic and brain-based is itself a function of the predominance of the fragmented mind amongst those constructing the texts.

The Fundamental Predicate

The fundamental predicate of the integrated/fragmented mind model is that human consciousness is non-localised and embedded within a "sea" of universal consciousness. As has been stated, this argument has been represented in transpersonal, positive and humanistic psychology, in indigenous cultures, and in numerous spiritual traditions, both East and West.[6]

The Psycho-spiritual Imperatives of Fragmented Consciousness and the Mechanistic Paradigm

Dualism and the Receptive Mode

Science and the Observer and Subject/object Split

The split of observer and object/subject is a fundamental premise of modern science and the scientific method. Sardar (1998) writes that enlightenment science worked with:

> *...the "ontological" assumption of separateness: separability of observer from the observed; parts from the whole; organism from the environment; man from nature; mind from matter; science from religion – separateness from one another of the 'fundamental particles' which are presumed to compromise ultimate reality.* (Sarda 1998: 205)

The essential dualism inherent in this ontological stance of observer and object/subject split has meant that a crucial aspect of integrated intelligence has became stultified. That aspect is "receptivity".

What Is Receptivity?

The idea of receptivity is central to the process of integrated intelligence. Essentially receptivity is a term used here to denote the state of mind that allows for the possibility of receiving thoughts or ideas from within the subtle levels of the mind and, in accordance with the integrated/fragmented mind model, from "external" sources beyond the brain. Meister Eckhart (Lang 2004) stated that one has to empty the mind of all concepts to allow divine intelligence to enter. (ibid.) This, according to Lang (2004), entails "a letting go into a mystery." (Lang 2004) Ancient Chinese sage Lao Zi stated that: "one should gain an insight/into the beginning of the Tao/by constantly observing the Nothingness." (Zhengkun 1995: 59) Such mystics as these suggest that a relaxed openness to the most subtle levels of mind is required to perceive mystical insights.

The terms "receptive" and "receptivity" often appear in texts which depict integrated

consciousness. Examples include: Chandler (2001); Clarke (1989: 140); Fox and Sheldrake 1996: 43); Myss (2001: 244); Ross (1993: 34); Stanford (1977); Steinkamp (2002: 416); and Storm (1999: 251). The concept of receptivity within integrated intelligence represents a clear distinction from dominant representations of consciousness. Receptivity requires a relaxation, a "letting go", and release of the power and control of the conscious mind.

One of the most lucid descriptions and explanations of receptivity is given by optometrist Jacob Liberman (1995), in his concept of "open knowing."[7] Liberman writes about the connection between quality of eyesight and states of consciousness, and argues that there are other ways of knowing that incorporate "receptivity." He writes:

> *When our (consciousness) field is open we never have to think to know. The spontaneous flow of receptivity and response requires no linear processing. In fact, thinking hard will instantly cut it off. In comparison, linear thought appears shallow and almost mechanical.* (Liberman 1995: 178)

The contrasts with mechanistic representations of "knowing" are notable. "Open thinking" is not a conscious, controlled, "linear" and "hard" thinking process, but a "spontaneous flow" suggesting the surrender of control by the conscious mind. Liberman sees typical human thinking as "shallow and almost mechanical", suggesting that receptivity requires access to the depths of the human psyche beyond the conscious ego and the rational mind.

Receptivity is Incompatible with "Aggressive" Science

The absence of the idea of receptivity in mainstream consciousness theory can be viewed as a function of the dominance of extroverted patriarchy, the latter of which is a control-fixated culture and worldview dominated by the tendency towards conquest and colonisation of "the other" (Sardar 1998) and the "thrust" (Ross 1993: 32) of masculine force.

The nature of science is itself aggressive, and stands opposed to the concept of receptivity. The scientific method and one of its founding values of communal verification (Huff 2003: 24) sets up a process whereby scientists "attack" whatever findings are brought forward. Metaphors of battle and war are often used to describe the world of science and academia. Sheldrake (Sheldrake et al. 2001) writes of his academic tenure at Cambridge in the following terms:

> *...it was oppressive. New ideas were treated as guilty until proven innocent, and as soon as I or anyone took off on a flight of speculation, the others opened fire. Shooting people down is a favorite sport of academics, and Cambridge is a free-fire zone.* (Sheldrake et al. 2001: preface, xix)

The idea of attack, defence and threat are seminal to the very nature of logic and modern academia. de Bono (1986) describes the confrontational nature of Western "old style" thinking, where "two opposing ideas grow ever more rigid and fierce until they meet in a head-on clash." (de Bono 1986: 36). The battle metaphors are obvious in de Bono's analysis: "attack," "defense", "defenders," "head-on-clash", "triumph", and "subdued". Ideas are "rigid and fierce" (ibid.), again characteristic of patriarchy and the mechanistic paradigm. The commonalities with the dominator model (Eisler 2004) are equally apparent. In this system the ego sees opposing ideas as threats to its security. Security lies in stability of worldview; as change, chaos and uncertainty are unacceptable to the "control freak" ego. (Sheldrake et al. 2001)

This domination, control and attacking nature of the academic and scientific mind is clearly incompatible with both the worldview and cognitive processes associated with integrated intelligence. The receptive nature of integrated intelligence features a fluidity of boundaries and concepts, a tolerance for ambiguity and complimentarity (Bohm 1995), and a surrender of control to a force greater than the individual self. Jacobson (1999) and Hawkins (2002), recount strong evidence of the latter, as they recount deeply mystical states whereby all conscious decision making is surrendered to a greater-than-conscious universal intelligence.

Psyche as "Other"

The Western objectification of nature and the "other" (Sardar 1998) may be interpreted as an extension of the Western fear of the psyche. (Ross 1993; Sheldrake et al. 2001; Wildman 1997) The psyche, like the "other" and nature, represents forces beyond the immediate control of the individual and its fragmented mind/ego. Wildman (1997) argues that: "much western exoteric science seems to demonstrate a desire to liberate the rational and objective 'I' from any form of unconscious or subjective influences." (Wildman 1997: 18) Wildman includes contemporary psychology, technology and consumerism as derivatives of this "exoteric science." Ontologisms and worldviews that incorporate integrated intelligence tend to emerge from civilisational ways of knowing which feature an implicit integration of object (other) and observer in their perceptual modalities. (Targ & Katra 2001: 88) These include the Australian Aborigines (Lawler 1991; Wildman 1997: 18), the Hindus (Ross 1993; Capra 2000), the Buddhists (Nisker 1998: 18-20), and the Kabalistic traditions. (Kafatos & Kafatou 1991)

The psyche (including any intelligence emanating beyond the hard boundaries of ego) as "other" becomes just another alien force to be controlled and dominated (repressed) by the ego.

Water Metaphors and Receptivity in Integrated Intelligence

Just as the machine metaphor reveals much of the rigid and patriarchal nature of modern science, the water metaphors used in numerous mystical writings reveal much about the state of consciousness that mystics refer to. Chinese mystic Lao Zi, touched upon the relationship of mystical experience and receptivity when he wrote that "he who knows the masculine but keeps to the feminine is ready to be the ravine under Heaven./ Being the ravine under Heaven, he is not parted from constant 'De' (Virtue)." (Jiyu 1998: 44) Contemporary Buddhist mystic Leonard Jacobson writes that: "The soul is like a river traveling through time." (Jacobson 1999: 145) Riverine metaphors are perfectly appropriate to describe the imaginative flow of spirit into the world, suggests Terrence McKenna (Sheldrake et al. 2001), because they "represent the flowing of forces over landscapes, the pressure of chaos on the imagination to create creativity." (Sheldrake et al. 1998: 49)

Fox (Fox & Sheldrake 1996) also uses a water metaphor to describe the perception of knowledge during the experience of "theophany" or "the beholding of the divine all around us." (Fox & Sheldrake 1996: 51) Fox compares this process to that of a fish in water, writing that: "The water's in the fish and the fish is in the water...", and includes "the idea that everything is somehow *bathed* in the divine and the divine is *washing* through everything." (ibid.: 50)

Thus water metaphors are commonly employed in texts which depict integrated intelligence. This suggests the fluid and receptive nature of integrated intelligence, and contrasts sharply with the rigid and hard metaphors of mechanistic science.

The Need for Power and Control

The Need for Control

The development of mechanistic science can be viewed as a direct function of the fragmented ego's need to control and dominate. McKenna (Sheldrake et al. 2001) states that:

> *Between the ego and the full understanding of reality is a barrier: the fear of the ego to surrender to the fact of chaos... we have lost touch with chaos because it is feared by the dominant archetype of our world, the ego. The ego's existence is defined in terms of control. The endless modeling process that the ego carries out is an effort to fight the absence of closure. The ego, wants closure. It wants a complete explanation.* (ibid.: 46-47)

In McKenna's view, the ego wants certainty and control; it wants knowing, "complete explanation" by possession, whilst refusing to surrender control. It "fights" for "closure"; for a universe of walls and boundaries – a concrete, spe-

cific, measurable (mathematical) world – a fortress world of "I" and "other", observer and subject/object. Wilber's (2000a) interior/individual quadrant is pushed away.

Eisler (2004) writes that science and technology are not the key problems of the modern age. Instead she locates the cause of the problem elsewhere.

> *It is modern science and technology within the system maintenance requirements of a dominator-orientated social organisation, with its cognitive cultural maps that present a rigidly hierarchic, chronically violent, exploitative, and inherently unjust social organisation as natural, and even moral.* (Eisler 2004: 85)

Goerner (2004) follows Eisler's argument, pointing to the "control" oriented, "exploitative" nature of the "war-based, coercive hierarchies" that have been a feature of the dominator model. (Goerner 2004: 180)

Yet here our concern is with the ways in which this control fixation affected our ways of knowing. Rowan (1986) points out that analysis - identified by Pickstone (2000) as one of the three primary ways of knowing of modern science - is attractive to those who desire control. Analysis creates the illusion of control. (Rowan 1991) Conversely intuition requires a "receptive" state of mind.

Here the term intuition more closely follows the classicist position on intuition, such as that of Spinoza and Bergson, which holds that intuitions are essentially metaphysical, a priori and antithetical to reason. (Ben-Zeev and Star 2001: 31-51) This contrasts with the inferential-intuitionist construction of intuition, which is a sensory/rational one, tending to locate informational sources in past experience or the external environment, and incorporates no metaphysical or mystical component. (ibid.)

Integrated intelligence requires a trust in something that is not within immediate control, and perhaps not in immediate awareness. Intuition is "slippery and elusive". (Rowan 1991: 11) A long line of psi researchers describe psi phenomena as "capricious, actively evasive" and "unsustainable". (Kennedy 2003) To the human control-orientated ego, the conception of consciousness as unbound and integrated is the perception of consciousness as uncontrollable, immeasurable, and unknowable via the intellect - a potential threat to the ego. McKenna (Sheldrake et al. 2001) compares the awareness of such an integrated intelligence to the experience of a lone fisherman journeying over sea at night, his net in the water.

> *Sometimes, something tears through your nets and leaves them in shreds, so you just row for shore and put your head under your bed and pray. Other times what slips through the nets are minutiae, the minnows of this icthyological metaphor of idea chasing. Sometimes you actually bring home something that is food for the human community, from which we can sustain ourselves and go forward.* (Sheldrake et al. 2001: 47)

McKenna's metaphor implies a terrified, vulnerable and "little" self, afloat in a sea of forces that are largely beyond control. It stands as the precise antithesis of the mechanistic paradigm's imperative of control and power – the insentient invulnerable automaton in a machine-universe.

Western Science's Parallels with Colonial /military Consciousness

Various critics have pointed to the colonial and hegemonic imperatives of western culture and its science. (Broomfield 1997; Ross 1993; Sardar 1998) Ross (1993) argues that "ego-centered patriarchal optimism fired colonial and imperial exploitation." (Ross 1993: 42) Modernist science and its instrumental rationality emerged at the time of the great colonial movements, of Western and patriarchal hegemony. Sardar (1998), critiques the notion that Western science is predicted on "an innate rationality or... the pursuit of disinterested truth..." (Sardar 1998: 205)

> *The growth of western science is a function of the exploitation, colonization and development of non-western societies...Western science advanced primarily because of the military, economic and political power of Europe, focusing on describing and explaining those aspects of nature that pro-*

moted the power of the upper classes in Europe. (Sardar, 1998: 204)

Sardar follows Sandra Harding's argument that Western science was predicated upon "European expansion, not as an epistemological cause of valid claims." (Sardar 1998: 205)

There are seminal parallels between the military mind and mechanistic consciousness: the fear of death, fear of the "other" (enemy), the need for control, and the desire to conquer, rape and destroy. Both are projections of patriarchy, and of the fragmented mind. In turn patriarchy itself can be viewed as an extension of the dominator model. (Eisler 2004) To refer to Bacon's infamous words, mechanistic science attempted to "torture" the secrets from nature via reductionism and analysis; via the vivisection. (Sardar 1998) Each of these characteristics of the military mind has been linked to modern science by various critics – death avoidance (Grof 1995, 2000; Reanney 1991); rigidity or hardness (de Bono 1986; Dossey 1999; Ross 1993; Tart 1993); patriarchy (Capra 2001; Eisler 2004; Ross 1993); need for power and control (Eisler 2004; Sahtouris 1999; Sardar 1998); and fear of the other. (Sardar 1998) The militaristic and mechanistic nature of western science and civilisation are inherently incompatible with receptivity and integrated intelligence.

The Rejection of the Invisible, and Obsession with Measurement is a Function of Control and the Need to Consciously Know

Various critics have pointed to the mechanistic paradigm and Western culture's emphasis upon the measurable and empirical. (Murinbata & Whitehead 2001; Sahtouris 1999; Sardar 1998: 205; Wilber 2000a, 2000b, 2000c, 2001) Former indigenous hunter Murinbata (Murinbata & Whitehead 2001) finds that Western cultures have an obsession with the empirical, at the expense of relationship, feeling, playfulness, and becoming "conscious". He writes that Western sciences:

> *...value object intelligence over social intelligence and technology over the arts; you teach your children the threes R's much too young when they should be playing and learning to be conscious and you do not believe anything you cannot see, touch or measure.* (Murinbata and Whitehead 2001)

Sardar (1998) states that one of the most notable developments of enlightenment science was:

> *...the notion that only that which could be measured is real. While experimentation and measurement were crucial parts of the sciences of many non-western cultures°Kin Europe they defined what was real and what was unscientific or literally unintelligible.* (Sardar 1998: 205)

In the wake of the seemingly ineluctable hegemony of patriarchy and its colonising ethos, the subtle, spiritual and non-measurable phenomena within the universe have tended to be excluded from mechanistic representations of both consciousness and phenomena in general. Dossey (2000) echoes this theme when he states that: "when science confronts some mysteries it turns tail and runs." (Dossey 2000: 16) de Bono (1986) writes that logical thinking systems "cannot deal with vagueness, uncertainty, and insecurity." (de Bono 1986: 129) de Bono argues that judgment is an essential aspect of the western way of thinking, which requires hard boundaries, and a "solidified" "YES/NO" cognitive process. (ibid.) Kosko (1994) echoes this point, lamenting western academia's "black and white" thinking and incapacity to tolerate "fuzzy thinking".

Within such a way of knowing, the essentially immeasurable and invisible world of intuitive and mystical experience can find no place. Phenomena which exhibit non-measurable aspects are reduced merely to that which is readily compatible with this paradigm. Thus the interior worlds of "I" and "we" have been reduced to "it" and "its". (Wilber 2000a) Having been rendered as "its" they can then be colonised, and the illusion of control maintained.

The Patriarchic Basis of Mechanistic Science versus the Feminine and Receptive Nature of Integrated Intelligence

The Feminine Has Been Undervalued and Denied in History

"The story of man" as Eisler (2004: 72) calls it, contains great inaccuracies and distortions because of its focus on male-dominated domains of History – economics and politics in particular – and its ignoring of the "experiences, situation, needs, problems, and aspirations of the female half of humanity." (Eisler 2004: 72)

This story has extended into modern western science. Ross (1993) writes that "it was our fathers' energy which was the driving force behind the whole exploratory and exploitative thrust of the scientific era." (Ross 1993: 32) Ross finds a correlation between the patriarchy of Western culture and the attributes of the phallus – externalized, specific, active and rigid. These can be contrasted to the qualities of the female organ – internal, warm, and most notably, "receptive". (ibid.: 34) Sardar (2000) argues that the very nature of science is inherently patriarchal, and that "the focus upon quantitative measures, analysis of variation, impersonal and excessively abstract conceptual schemes, is both a distinctively masculine tendency and also one that serves to hide its own gendered character." (Sardar 2000: 50)

Wildman (1997) finds that western science does not acknowledge seeing (insight; gnosis); and relating (connecting; relatio, religion). (Wildman 1997: 18) Wildman points out that modern science is exoteric, while seeing and relating are esoteric or inner. Wildman suggests that this development may be "a function of the maleness/patriarchy of our knowledge systems", because "men generally are separate creatures." (Wildman 1997: 18)

The "Feminine" Nature of Mysticism

Chinese mystic Lao Zi asked some 2600 years ago: "When the Heavenly Gate opens and closes, / Can you play the part of the female?" (quoted in Ross 1993: 174) The claim that mystical insight and inspiration in general has feminine properties is not new. Women's intuition is an oft-quote concept, and it is popularly believed that women are more intuitive than men, while men are believed to be more overtly rational. (Goleman 1998: 381-383)

Lao Zi's Tao (Jiyu 1998; Zhengkun 1995) is described as receptive, soft, yielding, and spontaneous. (Ross 1993:175-176) Other traditions and writers have also noted the feminine aspects of intuitive intelligence. (Broomfield 1997; Jung 1989; Nisker 1998; Pearsall 1999; Rowan 1991; Wilber 2000c; Wilde 2000: 180-181) Further, it has been well noted that a child-like sense of playfulness is correlated with an individuals' receptivity to psi phenomena. (Ritchie 1992; Pearsall 1999) This contrasts significantly with the carefully controlled, analytic, meticulous processes of experimentation and repeatability that define the "hard" sciences.

Pearsall (1999) finds a correlation between heart-transplant patients' intuitive abilities (including the capacity to sense ideas about their heart donor) and "femininity". (Pearsall 1999: 95-97) He suggests a fundamental difference in the way that men and women process their thoughts, and live life in general. Male recipients tended to call their new heart "it", paralleling patriarchal science's creation of a universe of external "its" (Wilber 2000a), while women tended to call it "theirs". (ibid.) Pearsall suggests that men value independence and reject dependence, while women tend to accept inter-dependence. Pearsall thus speculates that women are more open to the intuitive connections that their new heart offers. (ibid.) Pearsall's argument adds further weight to the popular belief that women are more intuitive and "sensitive" than men.

In a significant parallel, parapsychologist Susan Blackmore (2001) claims that sceptics of psi phenomena are vastly over-represented by male and patriarchal attitudes. (Blackmore 2001) This further suggests that males are somehow less attuned or open to mystical and subtle phenomena. McKenna (Sheldrake et al. 2001) sees the spiritual receptivity of women as bringing them closer to the chaotic, the creative, and the intuitive. This is because the lives of women involve more "boundary dissolving", and feminine sexuality "involves the acceptance of penetration... (creating) an entirely different relationship to boundary than does the male need to fulfill the potential to penetrate." (Sheldrake et al. 2001: 46-47)

It may be inferred that the dissolution of boundaries, so crucial to the experience and process of integrated intelligence, is part of the typical life experience of the female, while the male's need for the externalised act of penetration, renders him less receptive to incoming, non-localised intuitions. The connection with patriarchal science and its rejection of the soft and the subtle, and the collapse of boundaries is readily seen.

de Bono (1986) deconstructs "old style" western thinking (the logical rationality that followed in the wake of the ancient Greeks), which he describes as insisting on "fixed concepts, certainties and absolutes" (de Bono 1986: 17), and characterised by "arrogance", "smugness", "dogmatism" and "precision". (de Bono 1986) de Bono's critique suggests a cognitive process that is hard and inflexible.

Thus a western science which predicates its methods and ideology upon a patriarchal need for control and power is a science clearly at odds with the feminine and receptive nature of integrated intelligence. A civilisation which rejects or undervalues the feminine, the yielding, insight and connection is a civilisation which will undervalue or reject integrated intelligence, as all four factors are central to the latter concept's cognitive modalities.

Patriarchy Obscures Insight and Relationship

Patriarchy and the colonial/military mind which accompanies it, is incompatible with chaos and uncertainty, and thus with the feminine nature of integrated intelligence. Biologist Rupert Sheldrake (Sheldrake et al. 1998: 43-45) sees a profound connection with patriarchy's suppression of chaos, and the feminine and imaginative. Sheldrake suggests that: "chaos is feminine, and creation out of chaos is like creation out of the womb, an all-containing potentiality emerging out of darkness." (Sheldrake et al. 2001: 40) Sheldrake's colleague Ralph Abraham (ibid.) states that:

> *Patriarchy has made chaos bad and it has made Marduk boss: the god of law and order. We must reject this view of chaos so that the planet and life and love can be saved. Now, lo and behold, an event has come along that is positive... we are regaining chaos for potential partnership with the wheel. Chaos and order. Chaos and Cosmos. Chaos and the imagination.* (Sheldrake et al. 2001: 45)

Significantly love - banished along with compassion from the universe by the scientific revolution (Wilber 2001) - is posited as being incompatible with Marduk (too much law, order, and control). Chaos is seen as intricately linked with partnership and the imagination. Abraham goes on to state:

> *Chaos is intuitional. Chaos has a very flirtatious relationship with language. The process of creating a culture has to do with how we relate to the seduction of chaos (which is) beyond prediction, and beyond full, rational comprehension.* (Sheldrake et al.: 45)

The metaphor of love is extended with the terms "relate", "flirtatious", and "seduction". It suggests not only a strongly affective dimension, but a bonding, an integration that is the antithesis of detachment, the observer and subject/object split within patriarchal/empirical science. Notably the process of creation (of culture), intertwined with chaos, is "beyond prediction" and "beyond full, rational comprehension." It is thus beyond control, and beyond the control by knowing, colonisation and possession that is central to mechanistic science.

The Human Ego and Representations of Mind

Modern Science and the Individual Ego

In the modern age consciousness has become increasingly identified with the ego and the fragmented mind - Wilber's (2000a) interior/individual quadrant - and consciousness theory has tended to depict this state as the normal state of consciousness. At the conclusion of the BBC television series *Brainstory* (BBC 2001: episode 6) neurologist Susan Greenfield contemplates the future of brain science:

> *Whatever we learn about how the brain works, each one of us will continue to enjoy*

our own private world locked away inside our heads. I don't know that neuroscience will ever undermine what it means to be a unique human individual. (ibid)

Greenfield is reassured that the separated state of the fragmented mind will not be threatened in the future. Privacy, and the fragmented self, will remain "locked away" from the rest of the universe, and thus safe. Greenfield's view is an almost perfect representation of the western mechanistic worldview, with its insistence on isolated Newtonian bits and pieces, on separation, and on the primacy of the individual. The endeavors of both science and neuroscience, far from being ideally neutral, intimately reflect the presuppositions of the individualistic society that has created them, continues to valorise their ideas and methods, and in which they continue to be embedded. (Clarke 1989) It is argued here that western science is largely driven by these individualistic imperatives of the fragmented ego. It is thus a science, and in turn a consciousness theory which remains identified with the needs, prejudices and limitations of the ego.

The connection between the development of a controlling and mechanistic science and the human ego has been commented upon by various critics (Clarke 1989; Grof 1985, 1995, 2000; Murinbata & Whitehead 2001; Ross 1993; Sahtouris 1999; Wilber 1999, 2000a, 2000b, 2000c, 2001). Further evidence of the ego's grip in the contemporary world in general comes from this common theme within mystical insight and transpersonal psychology. (Hawkins 1995: 75; Jung 1989; Reanney 1991; Sheldrake et al. 1998; Wilde 1993, 2000)

Reanney (1991) writes:

The present chaotic state of Western society is a direct result of the proliferation of these personal, ego-self boundaries. This is why life in the affluent West is full of limits and littlenesses, of barriers and of greed. Our religious life is full of sect, our social life of class distinctions, our psychological life of prejudice. Each of these things is a limitation, a narrowing of vision... (Reanney 1991: 171)

Sardar (1998) argues that European science, reflecting the imperatives of the ego, "had to be shown to be separate from all other sciences and traditions – unique to Europe and a law unto itself." (Sardar 1998: 205) Western "egoic" consciousness (Ross 1993) set itself up to be separate and better than all other civilisations and ways of knowing. Within "the iron cage of materialism" people have become mere objects, losing touch with their feelings. (Ross 1993: 42) They have "become blind to the subtle levels of personal interactions." (ibid) The consequence is that the ego lives in separation and in a state of perceived threat from the environment. This also leads to the fear of inner worlds and the psyche. Ross argues that the modern obsession with germs and hygiene stems from "our neglected need to deal with the creepy crawlies in our own psyches." (ibid: 43) The modern education system mirrors the ego-fixated imperatives of science and modern western culture, where school students develop little awareness of their inner worlds or engage in meditative self-reflection (Targ & Katra 1999), and tertiary education has become increasingly about credentialism (Guile 2003), prestige and impressing others. (Loye 2004b)

Ego-fixated consciousness is comfortable with the mechanistic paradigm. The mechanistic paradigm owes much of its success to its having satisfied "ego-centered patriarchal optimism", (Ross 1993: 42) Its "technological successes have blinded us to its limitations and provided substitute gratifications for the emotional and spiritual deprivation which it engendered." (ibid: 33). By defining consciousness and self within the individual/exterior domain and denying the inner and collective (Wilber 2000a) - scientists, researchers and theorists can remain confident that they, and all of humanity, exist only as discrete entities, knowable and controllable via immediate sensory codification. Modernity's mechanistic universe is a universe "out there", appropriately made of bits and pieces that can be analysed, dissected, and controlled. In this sense it is attractive to the ego's need for control and power.

Science and the Imperatives of Ego

The argument that contemporary science is dominated by ego-centered consciousness becomes more tenable when biographical details of the lives of scientists residing within the mechanistic paradigm are revealed. Whilst a popular depiction of scientists is of impassionate and objective devotees of truth, a deeper examination reveals various lives of ego-centered ambition and almost manic drive for success and fame. Dossey (2000) describes modern science as "sanctimonious and self-righteous." Newton, considered the father of modern science, was an overly sensitive, almost paranoid individual prone to decades-long petty quarrels with his intellectual rivals. (Hawking 2003) Crick and Watson, credited with the discovery of the DNA sequence, were "ambitious and arrogant." (Jardine 2000: 356) The entire race to unveil the DNA molecule was marked by "brash remarks, rash promises of success, mistakes hastily withdrawn and reworked, personality clashes that hinder breakthroughs and glittering prizes for a few at the end of the day." (ibid: 356-357) Dossey (2000) describes Dawkins' selfish gene theory as a classic case of "anthropomorphic projection", implying that it is Dawkins and the scientists who are selfish and self-serving.

Contemporary science is heavily influenced by the fragmented ego, and the ego games played by scientists within the institutions that seemingly necessitate such an attitude. Loye (2004b) echoes this point when he claims that contemporary mainstream science is characterised by the following attitude:

> *Do good for yourself by dazzling people with complexity, obscurity, and/or the regressive ideology of your status quo theorizing and you will gain a doctorate, grants, good book contracts, and increasing power in the academic hierarchy.* (Loye 2004b: 254)

The game is thus to solidify the separation of ego boundaries ("for yourself"), to impress others ("dazzle" them), via the obscurity of prolix intellectualism ("theorizing"). This creates a context for de Bono's unflattering description of universities as "irrelevant centres of mental masturbation." (de Bono 1986: 16)

de Bono (1986) also points out that the very nature of logic, so much a part of western science and philosophy in the wake of the ancient Greeks and the Renaissance philosophers, inevitably leads to "smugness" and "arrogance". (de Bono 1986: 32) The "YES/NO" foundations of logic entail the "duty to impose your idea on someone else". (ibid.) Logic and strict instrumental rationality tend to solidify ego boundaries and the need to be right, thus perpetuating the separateness of fragmented consciousness.

It is not the intention here to vilify science and scientists as a whole, but simply to point out that the human ego and individualism have long played a significant role in the practice of modern science, embedded as it is within a western culture that mirrors and valorises just such qualities. (Clarke 1989) In turn, it has been argued here that western society is reflective of a stage of evolutionary consciousness that is predicated upon the drives of the ego and the fragmented mind.

The Mechanistic and Materialistic Worldview Is Rooted in Fear of Birth and Death

It is the fear of birth and death that are the greatest fear of the fragmented ego. (Grof 1995; Wilber 1999; 2001: 116-117) Wilber (1999, 2001) refers to the imperative of the ego to deny death, and perpetuate its separated, self-fixated worldview as "the Atman project". (Wilber 1999, 2001: 116-117) Wilber follows the eastern mystical worldview in using the metaphors of the ripple (the ego) and the ocean (universal consciousnesses) to explicate this argument.

> *Since all it wants is the infinite, but since it is terrified of accepting the necessary death, it goes about seeking infinity in ways that prevent it. Since the ripple wants release and is afraid of it at the same time, it arranges a compromise and a substitute. Instead of finding actual Godhead, the ripple pretends itself to be god, cosmoscentric, heroic, all-sufficient, immortal. This is not only the beginning of narcissism and the battle of life against death, it is a reduced or*

> *restricted version of consciousness, because no longer is the ripple one with the ocean, it is trying itself to be the ocean.* (Wilbe 2001: 117)

Here we see the ultimate psycho-spiritual imperative of egocentric consciousness, of observer/object dualistic science, and of modern society, with their control dramas, their narcissism, and their anthropocentrism. One may also note the significance of the rejection of mortality and the denial of death. (Kubler-Ross 1977, 1997; Reanney 1991) Wilber's argument reminds us of Dylan Thomas' archetypal "rage against the dying of the light." Refusing to "go gentle into that good night", the fragmented ego denies all that is impermanent, affective and vulnerable in regard to the human journey, and to the nature around it. (Ross 1993) In the words of physicist David Bohm, whilst in conversation with Krishnamurti: "Thought has constructed itself as an instrument for survival." (Krishnamurti 1987: 533) It is thus argued here that mechanistic science's depiction of humanity and the cosmos as machine-like emerged from this denial of human vulnerability. In turn it underpinned science's equating consciousness with the fragmented realm of the ego/conscious mind.

Grof (1995) points to the parallels between war-time images and those images and metaphors gleaned from studies of non-ordinary states of consciousness, and especially in regard to in uterine memories. Grof finds that the fetus perceives the pressures of birth as a potential threat, and the memory of this remains imprinted unconsciously on the psyche of the individual throughout life. (Grof 1985, 1995, 2000) Grof's conclusion is that individuals who initiate war activities are substituting externalised targets for aspects in their own psyches that should ideally be embraced in introspective analysis. (Grof 1995)

Notably, Grof (1985, 2000) argues that a release from the psyche's fear of death and birth results in a transformation of perception and consciousness.

> *Those who complete the death-rebirth process connect with intrinsic spiritual sources and realise that a mechanistic and materialistic world view is rooted in fear of birth and death.* (Grof 1985: 49)

In the wake of this realisation, the individual comes to perceive the world "in terms of energy patterns instead of solid matter." (ibid.) Personal boundaries become more fluid and open. Spirituality becomes more important, whilst the physical world can still be viewed as "objectively real." (Grof 1985: 49) Grof's argument adds further weight to the idea that fear of death and birth creates a self of hard-boundaries; with a materialistic, rigid, and closed relationship with life; it also creates the character distortions of overt "haunting ambition" "competitive drives", and "the need to prove oneself." (ibid.) These characteristics are closely associated with the tenets of mechanistic science, as argued above. It is thus argued that there is a close correlation between the mechanistic worldview of modern science and the human psyche's unresolved issues associated with birth and death.

Thus mechanistic science, academia, and modern society tend to encourage a culture of self-importance, arrogance and narcissism, which is antithetical to the ways of knowing and worldview necessitated by the acknowledgment of integrated intelligence. The latter is founded on selflessness, the transcendence of ego, and the surrender of power to something greater than the individual self and its separated ego.

Conclusion

It has been argued above that mechanistic science is founded on the imperatives of the fragmented mind and ego. It has further been argued that the fragmented mind has a tendency to grasp the state of separation, and to avoid awareness and acknowledgement of its integrated nature. It is this imperative of the fragmented mind which has underpinned the development of the mechanistic paradigm, and its subsequent rejection of integrated intelligence. A circularity, a self-stultifying dynamic has emerged. Ego-based consciousness views itself as fragmented from the transpersonal, and has an innate propensity to maintain that state. It

then creates limited, fragmented representations of mind which reflect that propensity, and engages in the discourses of modernity and post modernity with an implicitly self-perpetuating, self-limiting representation of mind, employing rational/empirical ways of knowing which maintain the entire status quo.

Thus it is that reductionist and mechanistic representations of consciousness have assumed a privileged position in the modern world, and the mechanistic nature of consciousness has come to be a given within our images of the mind. The silencing of the "others" (other representations of mind, other ways of knowing, other ways of being) represents an important awareness if we are to envisage a more complete map of the human mind and of our futures.

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Notes

1. The state of separation of the individual from universal and integrated intelligence shall be referred to as "the fragmented mind."
2. See Anthony (2004) for a more detailed definition.
3. Wilber (2000c) argues that indigenous cultures hold not a transpersonal, but a prepersonal, undifferentiated level of consciousness development, which is prior to the rational mind. However Wilber sees some shamanic experience as essentially an incursion of transpersonal consciousness into the prepersonal mind, and thus of transrational origin. See Wilber (2000c: 244-50) for more on this.
4. The term "critical spirituality" as used here is not taken from Bussey's (2000) concept of "critical spirituality". The concept I am using here is much simpler than Bussey's – essentially that these authors write about spiritual experiences and phenomena from a primarily analytical and intellectual viewpoint and process. Conversely Bussey's critical spirituality allows for the insertion of deeply reflective, meditative and transpersonal tools.
5. Wilber (2001) sees the proponents of the New Age movement as predominantly prerational addicts of "narcissistic regression and self-centric fixation." (Wilber, 2001: 194) Wilber finds that the movement contains a minority of individuals with an understanding of genuine transrational experience, suggesting the need for caution in regard to the utilisation of these texts.
6. For a general introduction to this, see Dossey (2001); Gebser (1985); Hawkins (2002); Kennedy (2003); Ritchie (1992); Targ and Katra (1999); and Wilber (2000a, 2000b).
7. Note: Liberman's is a type six "new age" text. Like all such texts his "research" cannot be considered scientific, being highly anecdotal and based upon personal mystical experience. Yet it is worthy of cautious inclusion as it typifies many of the components of "receptivity".

References

Anthony, M. 2005. "Education For Transformation: Integrated Intelligence in the Knowledge Society and Beyond." *Journal of Futures Studies* 9(3): 31-46.

BBC Worldwide. 2001. *Brainstory*. BBC television series.

Ben-Zeev, T., and J. Star. 2001. "Intuitive Mathematics: Theoretical and Educational Implications." In B. Torff & R. Strenberg (eds.) *Understanding and Teaching the Intuitive Mind*. Mahwah: LEA Books.

Bishop, S. 1995. *Chinese Thought: An Introduction*. Delhi: Motilal Banarsidass Publishers.

Blackmore, S. 2001. "What Can the Paranormal Teach Us About Consciousness?" *The Skeptical Inquirer*. Buffalo 25(2).

Bloom, N. 2001. *How Blind Is the Watchmaker?* Leicester: Intervarsity Press.

Bohm, D. 1995. *The Undivided Universe*. London: Routledge.

Broomfield, J. 1997. *Other Ways of Knowing*. Rochester: Inner Traditions.

Bucke, E. 1991. *Cosmic Consciousness*. London: Penguin.

Bussey, M. 2000. "Critical Spirituality." *Journal of Futures Studies* 5(2): 77-88.

Capra, F. 2000. *The Tao of Physics (25th anniver-*

sary edition). Boston: Shambhala.
Chalmers, D. 1997. *The Conscious Mind: In Search of a Fundamental Theory*. London: Oxford University Press.
Chandler, K. 2001. *Psi: What It Is and How It Works. A Central Model For Parapsychology*. Lincoln: Choice Press.
Clarke, M. 1989. *Ariadne's Thread*. London: St Martin's Press.
Davies, P., and J. Gribbin. 1992. *The Matter Myth: Beyond Chaos and Complexity*. London: Penguin.
Dawkins, R. 1976. *The Selfish Gene*. New York: Oxford University Press.
de Bono, E. 1986. *Po: Beyond Yes and No*. Middlesex: Penguin.
_____. 1999. *Six Thinking Hats*. London: Penguin.
de Chardin, P. 1976. *The Phenomenon of Man*. London: Perennial.
Dossey, L. 1999. "Healing and Modern Physics: Exploring Consciousness and the Small-is-beautiful Assumption." *Alternative Therapies in Health and Medicine*. July.
_____. 2000. "The Science Blues." *Alternative Therapies in Health and Medicine*. July.
_____. 2001. *Healing Beyond the Body*. Boston: Shambhala.
Eisler, R. 2004. "A Multi-linear Theory of Cultural Evolution." In Loye, D. (ed.). *The Great Adventure: Toward a Fully Human Theory of Evolution*. New York: State University of New York Press.
Foucault, M. 1984. *The Foucault Reader*. New York: Pantheon Books.
Fox, M., & R. Sheldrake. 1996. *The Physics of Angels*. San Francisco: Harper.
Freud, S. 1962. *Totem and Taboo; Some Points of Agreement Between the Mental Lives of Savages and Neurotics*. New York: W. W. Norton & Company.
Gebser, J. 1985. *The Ever Present Origin*. Athens: Ohio University Press.
Goerner, S. 2004. "Creativity, Consciousness, and the Building Of An Integral World." In Loye, D. (ed.) *The Great Adventure: Toward a Fully Human Theory of Evolution*. Albany: State University of New York Press.
Goleman, D. 1998. *Working With Emotional Intelligence*. New York: Bantam Books.
Grof, S. 1985. *Beyond the Brain*. New York: State University of New York Press.
_____. 1992. *The Holotropic Mind*. New York: Harper Collins.
_____. 1994. "Alternative Cosmologies and Altered States." *Noetic Sciences Review*. Winter 1994: 21-29.
_____. 1995. "Consciousness Evolution and Planetary Survival." Paper presented at the Thirteenth International Transpersonal Conference in Killarney, Ireland, June.
_____. 2000. *Psychology of the Future: Lessons From Modern Consciousness Research*. New York: State University of New York Press.
Guile, D. 2003. "From 'Credentialism' to the 'Practice of Learning': Reconceptualising Learning For the Knowledge Economy." *Policy Futures In Education* 1(1): 83.
Hawking, S. 2003. *On the Shoulders Of Giants*. London: Penguin.
Hawkins, D. 1995. *Power Versus Force: An Anatomy of Consciousness*. Sedona: Veritas.
____. 2002. *Power Versus Force: An Anatomy of Consciousness*. London: Hay House.
Hayward, J. 1984. *Perceiving Ordinary Magic*. Boston: New Science Library.
Homer. 2002. *The Odyssey*. (Translator: Fitzgerald, R.) New York: Farrar, Straus and Giraux.
Huff, T. 2003. *The Rise Of Early Modern Science*. Cambridge: Cambridge University Press.
Inayatullah, S. 2002a. *Questioning the Future*. Taipei: Tamkang University Press.
_____. 2002b. *Understanding Sarkar*. Leiden: Brill.
Jacobson, L. 1991. *Words From Silence*. New York: Conscious Living.
_____.1999. *Bridging Heaven and Earth*. New York: Conscious Living.
Jardine, L. 2000. *Ingenious Pursuits*. London: Abacus.
Jiyu, R. 1998. *The Book of Lao Zi*. Beijing: Foreign Languages Press.
Jung, C. 1973. *Synchronicity*. New York: Bollingen.
_____. 1989. *Memories, Dreams, Reflections*. New York: Vintage.
Kafatos, M. and T. Kafatou. 1991. *Looking In, Seeing Out*. Wheaton: Quest Books.
Kennedy, J. 2003. "The Capricious, Actively Evasive, Unsustainable Nature of Psi: A

Summary and Hypothesis." *The Journal of Parapsychology* Durham: 67(1).
Kubler-Ross, E. 1977. *On Death and Dying*. New York: Scribner.
_____. 1997. *The Wheel of Life*. New York: Simon and Schuster.
Kosko, B. 1994. *Fuzzy Thinking*. London: Flamingo.
Krishnamurti, J. 1956. *Education and the Significance of Life*. London: Victor Gollancz Ltd.
_____. 1987, 1973. *The Awakening of Intelligence*. San Francisco: Harper Collins.
Lang, J. 2004. "Meister Eckhart." *www.headless.org.* Opened 11.03.04.
Laszlo, E. 2004 "Matter and Mind: The New Holism and the Greater Humanity." In Loye, D. (ed.). *The Great Adventure: Toward a Fully Human Theory of Evolution*. New York: State University of New York Press.
Lawlor, R. 1991. *Voices of the First Day: Awakening in the Aboriginal Dreamtime*. Vermont: Inner Traditions.
Liberman, J. 1995. *Take Off Your Glasses and See*. London: Thorsons.
Loye, D. 2004a. "Darwin, Maslow, and the Fully Human Theory Of Evolution." In Loye, D. (ed.) *The Great Adventure: Toward a Fully Human Theory Of Evolution*. Pp. 20-38. New York: State University of New York Press.
_____. 2004b. "What Should It Look Like?" In Loye, D. (ed.) *The Great Adventure: Toward a Fully Human Theory of Evolution*. Pp. 239-268.New York: State University of New York Press.
Mack, J. 1999. *Passport to the Cosmos*. New York: Three Rivers Press.
Moody, C. 1994. "Conversations With Zombies." *Journal of Consciousness Studies* 1 (2): 196-200.
Murinbata, T., and C.Whitehead. 2002. "Why Consciousness Conferences are Not Really Getting Us Anywhere." *www.imprint.co.uk/pdf/Tjiniman.pdf.* Opened 13.11.02.
Myss, C. 2001. *Sacred Contracts*. Sydney: Bantam Books.
Nisker, W. 1998. *Buddha's Nature*. New York: Bantam.
Panek, R. 2000. *Seeing and Believing*. London: Fourth Estate.
Pearsall, P. 1999. *The Heart's Code*. New York: Broadway Books.
Pickstone, J. 2000. *Ways Of Knowing: A New History Of Science, Technology and Medicine*. Manchester: Manchester University Press.
Reanney, D. 1991. *The Death of Forever*. Melbourne: Longman Cheshire.
_____. 1994. *The Music of the Mind*. Melbourne: Hill of Content.
Ritchie, J. 1992. *Inside the Supernatural*. London: Fontana.
Ross, G. 1993. *The Search For the Pearl*. Sydney: ABC Books.
Rowan, R. 1991. *The Intuitive Manger*. New York: Berkley.
Sahtouris, E. 1999. "From Mechanics to Organics: An Interview With Elisabet Sahtouris." Transcript of an interview with Scott London on the radio program *Inside and Outlook. http://www.scott(London.com/insight/scripts/sahtouris.html*. Opened 29.11.02.
Sardar, Z. 1998. *Postmodernism and the Other*. London: Pluto Press.
_____. 2000. *Thomas Kuhn and the Science Wars*. Cambridge: Icon Books.
Schiebinger, L. 2003. "Introduction: Feminism Inside the Sciences." Signs. Spring.
Shapiro, M. 1992. *Reading the Postmodern Polity*. Minneapolis: University of Minnesota Press.
Sheldrake, R. 1981. *A New Science of Life*. Los Angeles: Tarcher.
_____. 1988. *The Presence Of the Past: Morphic Resonance and the Habits Of Nature*. London: Times Books.
_____. 2003. "The Extended Mind: Recent Experimental Evidence." On-line video lecture. http://murl.microsoft.com/LectureDetails.asp?1035.
Sheldrake, R. & M. Fox. 1996. *The Physics of Angels*. San Francisco: Harper Collins.
Sheldrake, R., T. McKenna, R. Abraham. 2001. *Chaos, Creativity, and Cosmic Consciousness*. Rochester: Park Street Press.
Sophocles. 2000. *The Theban Plays*. London: Penguin.
Stanford, R. 1977. "Conceptual Frameworks of Contemporary Psi Research." In B. Wolman (Ed.), *Handbook of Parapsychology*. New York: Van Nostrand Reinhold.

Steinkamp, F. 2002. "A Review of Steinkamp's 'PSI: What It Is and How It Works: A Central Model For Parapsychology.'" *The Journal of Parapsychology* 66(4).

Storm, L. 1999. "Synchronicity, Causality, and Acausality." *The Journal of Parapsychology*. Sept.

Targ, R., & J. Katra. 1999. *Miracles of Mind*. Novato: New World Library.

____. 2001. "The Scientific and Spiritual Implications of Psychic Abilities." *Alternative Therapies In Health and Medicine*. May/Jun.

Tart, C. 1993. "Consciousness: A Psychological, Transpersonal and Parapsychological Approach." Paper presented at the Third International Symposium on Science and Consciousness in Ancient Olympia. 4-7 January.

Walsh, R. 1990. *The Spirit of Shamanism*. Los Angeles, Tarcher.

Walsh, R. and F. Vaughan. 1993. *Paths Beyond Ego*. Los Angeles: Tarcher.

Wilber, K. 1999. *Up From Eden*. Boston: Shambhala.

_____. 2000a. *Integral Psychology*. Boston: Shambhala.

_____. 2000b. *A Brief History of Everything*. Boston: Shambhala.

_____. 2000c. *Sex, Ecology, Spirituality*. Boston: Shambhala.

____. 2001. *Eye to Eye*. Boston: Shambhala.

Wilde, S. 1993. *Whispering Winds of Change*. London: White Dove International.

_____. 2000. *The Sixth Sense*. Carlsbad: Hay House.

Wildman, P. 1997. "Dreamtime Myth: History As Future." *New Renaissance* 7(1).

Zhengkun, G. (ed.) 1995. *Lao Zi: The Book of Tao and Teh*. Beijing: Peking University Press.