Appendix-A
(A note on Advaita Philosophy)

We attempt here to provide a brief introduction to the philosophy of Advaita Vedanta as exposed by Sri Aadi Sankaracharya (8th century AD) and his followers. This philosophy was there from antiquity but Sri Sankaracharya revived it to establish its logical preeminence. Today Advaita philosophy enjoys great honour and respect. The core of thinking has a timeless quality to it. This philosophy is upheld by the Upanishads and Srimad Bhagavad Gita (for example, refer [Ramachandra Iyer,1988]). The first known systematic exposition of Advaita is by Gaudapada, who is the Parama-Guru (preceptor’s preceptor) of Sri Sankaracharya. The earliest writings of Sureswara, Padmapada, Totaka and Hastamalaka on Advaita are also available today. Sankaracharya’s commentaries to the Upanishads, Brahmasutras and Bhagavad Gita define the parameters of Advaita thought. Among the different Indian philosophies Advaita is the most important one and it is often compared with the Madhyamaka and Yogacara schools of Buddhism [Mahadevan,1975]. According to Swami Vivekananda, Advaita is the ultimate philosophy of reality or truth.

This subject of Advaita is very vast and therefore we mostly confine only to the very limited part relevant to the thesis. ‘Dva’ in Sanskrit means the numerical two. ‘Advaita’ is just the opposite of ‘Dvaita’ which then stands for, ‘not two’, but only one. Advaita, therefore, literally means non-duality which is sometimes called monistic idealism. There are two varieties in monism. ‘Monistic idealism’ is the philosophy that defines consciousness as the primary reality, as the ground of all being. Materialistic monism on the other hand denies the existence of consciousness. Advaita is the philosophy of non-duality, monistic idealism or the oneness. There are two main variations to the Advaita approach: Dvaita and Vishishtadvaita. The Dvaita philosophy of Sri Madhvacharya holds that the outside world and the inner self are quite distinct. Vishishtadvaita is qualified Advaita which is somewhat in between the above two philosophies of Advaita and Dvaita.
The Vishishtadvaita philosophy was advocated by Ramanujacharya of Vaishnava sect.

Brahman in Sanskrit means The Absolute Supreme Self which is the source of everything. The quest of Upanishads is to understand the Brahman (the universal self or Purusha), the Ātmā (or the individual Self or soul) and their relationship [Samsthana, 1979]. The great statements which equate Brahman and Ātmā are:

a) Āyaamatma Brahman (Mundaka Upanishad)- The Ātmā is the Brahman [Swami Chinmayananda, 1966],

b) Tattvamasi (Chandogya Upanishad)- That Thou Art,

c) Aham Brahmasmi (Brahadaranyaka Upanishad) - I am Brahman,

d) Prajnanim Brahman (Aitareya Upanishad) –Consciousness is Brahman,

e) Brahman Sathyam, Jagan Mithya- The Brahman is real and world is unreal,

f) Jiva Brahmasa Na Aparah- The absolute (Brahman) is verily the Ātmā; this world is unreal; the individual soul (Jiva) is non-different from Brahman,

g) Sarvam Khalvidam Brahman – All are surely the Brahman alone,

h) Prajnyanam asmi- I am consciousness.

Srimad Bhagavad Gita proclaims that the Kshethra (body) and Kshethrajna (knower of the body) are verily the same [Alladi Mahadeva Sastri, 1997]. The 'Known' and the 'Knower' are not different. Advaita asserts that the subject and the object are one and the same and that the outwardly seen world is considered as illusory. This means that Maya or illusion is responsible for the appearance of the so-called ‘objective’ outside world. According to Advaita:

• Universe independent of Brahman, has no real Reality,
• But the world of human perception can never reveal this truth,
• Dualistic knowledge derived from perception alone leads to incomplete, false knowledge,
• To “know Brahman” is to “be Brahman”,

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• **Brahman** is described in the Upanishads as Truth (**Sathyam**), knowledge (**Jnanam**), infinite (**Anantham**),

• **Brahman** is also described as Being (**Sat**), Consciousness (**Cit**), Bliss (**Ā nanda**),

• **Brahman** is eternal and changeless which is instrumental cause of universe,

• However, **Brahman**’s true nature cannot be captured in words,

• **Brahman** is not an object, as it is beyond the reach of senses, mind or intellect,

• It is non-dual, one without a second. It has no other besides it,

• **The Ā tman** is the self evident; it is not established by extraneous proofs,

• It is not possible to deny Ā tman as it is the quintessence of all,

• One who has realized the identity of his own Ā tman with the **Brahman** is the one who is liberated (**jivanmukta**),

• The identity of Ā tman and **Brahman** is a matter of absolute truth.

The axiom that one **Brahman** is the cause of many-fold universe is the foundation on which the entire system of **Advaita Vedanta** is based. Why does human perceptive fail to see **Brahman** directly? Sri Sankaracharya attributes this to ignorance or **Maya** (illusion or the power to deceive).

Sri Atmananda Krishna Menon valuable statements, assertions and examples are pertaining to reflection back into the “I”. Again these statements point to the oneness of consciousness. Below are a few excerpts about consciousness and **Advaita** by him:

• All objects point to consciousness,

• In actual fact, no one ever can experience any object outside consciousness,

• What is shown is always consciousness and only that,

• Consciousness has no outside,

• Consciousness is always present throughout,

• Everything is pure consciousness,

• Nothing else but consciousness is ever shown,

• Presence of pure consciousness is shown by every object.
The *Advaita* concept that subject and the object or the self and the world are one and the same can be translated into quantum mechanics as observer and the observed are really one and the same. Our assertion in this thesis is that QM corroborates this philosophy in various significant ways. We find that quantum mechanical paradigms and considerations categorically do lead to the philosophy of *Advaita*. Though Schrödinger arrived at *Advaita* by his formidable reasoning, they are not based on quantum mechanical considerations.

In fact *Advaita* is much more than what is given in our very small exposition. The subjective and the objective are the singular, separate appearances of the omnijjective. *Advaita* or non-duality is one of the most logical and sound philosophies in the whole of human history. Spiritual masters including Sri Aadi Sankaracharya, Swami Vivekananda, Sri Ramana Maharshi, Paramahamsa Yogananda, Sri Aurobindo and Mata Amrithanandamayi Devi (AMMA) have also endorsed the truth of this *Vedantic* philosophy in categorical and indirect terms on several occasions.
Appendix-B
(The Biological Case)

Biology persuades us to a conclusion similar to that of Cosmic Anthropic principle. ‘Mindless’, random evolution cannot wholly account for the infinite sophistication and organization of higher organisms. Anthropocentric principle of biology supports the imposition of ‘purposeful’ direction of evolution. For instance, if an organism moves to a colder region, it will certainly try to evolve itself in such a direction as to cope up with the new temperature. Models based on random mutations cannot always account for the above. Several ingenious adaptive techniques, brilliant camouflages, survival strategies, etc. that organisms adopt, betray the directedness of evolution and hence a suggestion of hidden purpose. Take another example; the stereoscopic binocular vision is only for judging the depth. It is difficult to believe such a precise engineering is due to mere accidental freak of nature. One takes innumerable examples of this type that would rule out any possibility of a probabilistic series of coincidences or small micro-level purpose-less forces forming to conjure a grand purpose. The conscious directive and purpose of evolution are highly apparent in biological world.

Classically it would take almost an infinite number of bytes to store the information of single scene in our ordinary life. There are such umpteen scenes that we remember in every day life. The entire atoms in the brain or even body of a man cannot account for such a memory. Therefore brain scientist, Karl Pirbram (chapter-7) proposed holographic memory and later this concept was extended to holographic cosmos. The gist of the matter that we take up here is the holistic nature of universe. There had been attempts to explain the phenomenon of memory and brain using quantum nature as well. The power of parallel computing by a quantum computer is used to explain the mental activities by Penrose and others [Hameroff and Penrose,1996]. The role of QM in the neuroscience research is widely recognized.
Appendix-C
(The Moral Aspect)


Universal love is the expression of the realization that everything is encompassed by the true self. Thus the ‘urge to know’ and the ‘universal love’ both become synonymous. Modern physics, especially QM fits neatly into the philosophy of Advaita which is not a miraculous coincidence. Both the external and internal worlds are only different manifestations of the same reality. If the world is really directed by pure consciousness, then all the physical laws should be reducible from the general psychic principles. This type of approach will be a rational top-down approach as opposed to the normal bottom-up one. In that case the following aspects would turn out to be of paramount importance:

a) The tendency for survival and achieve success,

b) The urge for clear comprehension,

c) The necessity for moral values and ethics.

The last one seems to be more remotely connected to physical causation than the previous two, but basically all the above might very well turn out to be one of the same origin. The moral laws and principles could be those rules which are derived from a comprehensive understanding of the very Nature or the Self. The reason for this is, if we properly understand and realize the real Self to be the only one, not many, the ‘selflessness’ would fade away and vice versa. Hence adhering to the moral codes would be an active exercise in getting rid of the false notions about the Self to augment the chances of comprehending the true nature of Self. The tendency to somehow survive is stemmed from the total ignorance of Self which constitutes the predicament of selfish ego. The ‘universal love’ can then be defined as the manifestation of the realization of the universality of Self which is the oneness as evident from the holistic nature of the universe (chapter-9).
We feel that this universal principle of consciousness, when viewed from a limited astrophysical point of view, is what turns out to be the anthropic principle. It is evident from biology that a form of anthropic principle works already in all the biological systems that imposes some controls on the mutations in the living cells which favour the chances of survival. This tendency in turn takes the organisms to higher ladders of evolution with greater complexity and organization. We may call this as biological anthropic principle and the former as astrophysical or cosmological anthropic principle.

In short, being the main purpose of all the scientific, philosophic and spiritual endeavours, true cognizance can be considered to be of the ultimate vital value. The technological developments have to be only achieved with due regard to this fact kept in mind, not in all haphazard ways. However, unfortunately these days the latter is given disproportionate priority, we feel. Even the course of scientific developments seems to be high-jacked to such an end. Senseless over emphasis for immoderate technological, material program could even spell immense disaster. One should strive to strike a proper balance for a wholesome all-round advancement. These significant themes are stressed by the most Revered spiritual Gurus like Swami Vivekananda and Mata Amrithanandamayi Devi (AMMA) through-out, for example [Swami Amritaswarupananda, 1993, Judith Cornell, 2001].