

**Recreating Our Reality:
A Comparative Study between a “Perceiving Being” in
Amit Goswami’s Quantum Physics and Alayavijnana in the
*Lankavatara Sutra***

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Abstract

Many scientists who study quantum physics have discovered the inextricable link between physics and consciousness. Human consciousness plays a critical role in relationships of interdependence. Exploring the quantum as consciousness, Amit Goswami declares that consciousness, not matter, is the basis of all existence. He holds that the universe is self-aware, and that consciousness creates the physical world. According to quantum physics, the existence of matter is dependent on the existence of a “perceiver.” Amit Goswami is convinced that the universe, in order to exist, requires a conscious sentient being to be aware of it. An observer's perception is essential in order for possibility to manifest as actuality. The doctrine of Consciousness-only in the *Lankavatara Sutra* has particularly informed my thinking about our existence in the world. Goswami’s conception of the role an observer plays in quantum physics echoes the function of the role of Alayavijnana in the *Lankavatara Sutra*. The *Alayavijnana*, store of sign-seeds, acts recursively on perception, on the interaction of the mind with the world. The conception of the *Alayavijnana* plays a key, though silent, role in the mental evolution of the *Lankavatara Sutra*. In my paper, I will make a comparative study between Amit Goswami’s discourse on the theory of a “perceiving being” of quantum physics and the working function of Alayavijnana in the *Lankavatara Sutra* to illustrate the fundamental nature of reality. Although the language, the focus or the discipline may vary, the conclusions of these studies have placed the same emphasis on human consciousness in its role within the holistic context of the universe. The discovery holds out the possibility of creating a sacred worldview in which both science and religion would be seen as distinct yet complementary ways of exploring the same underlying reality.

Keywords: quantum physics, consciousness, a perceiving being, Alayavijnana, Tathagata-garbha,

Everything is essentially consciousness,
purity and joy.
by Shankara - Hindu mystic - 9th century¹

The principles of scientific materialism, predominant from the late 18th century through the early decades of the 20th, claim that the world is ultimately recognizable as a collection of physical entities and processes.² From this perspective, there is a real world made up of material things we can identify. Human beings, drawing on analytical thought and experimental methods, can come to know the objective world. The world is interpreted mechanistically and reductively and divided between inside and outside, subject and object. Advocates of the mechanistic view have assumed that consciousness plays no significant role in the universe and in the nature of reality. In this sense, mind and reality are separate. The scientific worldview is pervaded with an enormous disparity between our understanding of the mind and that of the rest of the world. As Justin Whitaker points out, “The acceptance of scientific materialism leaves the Western man confused when trying to bring consciousness into his framework of reality.”³ According to Antonio Damasio, “Understanding consciousness says little or nothing about the origins of the universe, the meaning of life, or the likely destiny of both” (28). Yet Werner Sattmann Frese comments on the limitations of mechanistic materialism: “Scientific approaches based on mathematics, physics, and mechanics are now increasingly regarded as inappropriate, since they operate with linear functions, whereas the psychological world of human beings needs an approach that

¹ Quotation selected from *Einstein and Buddha: The Parallel Sayings* by Thomas J. McFarlane, 2001/2002, p. 43.

² For more information on the principles of scientific materialism, please refer to M. Alan Kazlev’s discussion of materialism at the website: <http://www.kheper.net/topics/worldviews/materialism.htm#analytical>

³ See Justin Whitaker’s article: “The Buddhist Philosophy of Mind,” in *Buddhist Psychology*, 495 (n.d.): n. pag.

allows for paradoxes and ambiguity” (101). In short, “the West presently has no pure science of consciousness that reveals the nature, origins, and potentials of this natural phenomenon, and it similarly lacks an applied science of consciousness that reveals means for refining and enhancing consciousness and thereby achieving eudaimonia”(Wallace, “A Science of Consciousness: Buddhism” 23).

The scientific paradigm might facilitate the development of mechanisms and technology, but it actually fails in terms of consciousness and psychosocial issues. In the midst of such extraordinary knowledge of the objective world, the subjective realm of consciousness remains largely an enigma. The methods of verification used in the physical sciences are generally limited to the outer sensory domain. As a result, questions about inner experience, including consciousness and the spiritual dimensions of experience, are unexplored. This conception of scientific materialism has retarded understanding of the nature of consciousness, its origins, or its role in nature. As the distinguished Tibetan Buddhist Alan B. Wallace has observed, “it is certainly an oversight to postpone for three centuries the scientific examination of one’s primary instrument of observation of the natural world: human consciousness” (Wallace, *The Scientific and Contemplative Exploration of Consciousness* 18).

For an integration of spiritual and physical science, there is a great need for balance between our inner and outer knowledge. We may be required to give up the idea of independent objective existence. The mind should play a central role in scientific observation and analysis. Consciousness is not an internal or external experience, nor is it limited to subjective or objective experience. Consciousness is a common context for both the subjective world and the objective world, both the inner world and the outer world. A. H. Almaas makes a comment on this: “The world is perceived, in some sense, as alive and living, as one infinite and boundless organism of consciousness. It is not merely the presence of Being or consciousness; this dimension of Being is experienced as a living organism, boundless and infinite” (*The Pearl beyond Price: Integration of Personality into Being* 475). For present-

day scientists from widely-ranging disciplines, a real understanding of consciousness appears to be of pivotal importance to comprehend more of the nature, the meaning and operation of the universe. Herbert G. Leberherz, a professor of biochemistry at San Diego State University, in his overview of the book *The Hidden Diamond*, states: "Unless modern Western science can embrace the concept that consciousness is primary, it will remain trapped in a repetitive maze."⁴

Recent advances in quantum physics signal an emergent paradigm that differs radically from scientific materialism with its invalid classical physics foundations. Quantum theory challenges the assumption that objects have an independent existence. Many scientists who study quantum physics have discovered the inextricable link between physics and consciousness. Their studies have shaken our concepts of mathematics and science, demonstrating that a linear understanding of the universe is flawed. Fred Alan Wolf, a physicist, has stated that by "modern physics, particularly quantum physics, we can rediscover what the ancients may have known. All we need are a few basic concepts – a new way of seeing the old way" (7). A physicist at the University of Oregon, Amit Goswami, argues against scientific or material realism, the philosophy which holds that material reality is the only reality and that all things are made of matter. According to his research, scientific materialism has been disproved by quantum physics. Amit Goswami sets out to develop a new paradigm, "a unifying worldview that will integrate mind and spirit into science" (*The Self-Aware Universe* 1993,1). In his book *The Self-Aware Universe: How Consciousness Creates the Material World*, he argues that consciousness indeed is the primal ground from which everything originates. Amit Goswami grounds this quantum theory for consciousness mainly on the perceptions in quantum physics. Amit Goswami holds that the universe is self-aware, and that consciousness creates the physical world. He maintains that consciousness is the fundamental reality determining both mental phenomena and matter.

⁴ For more information, see: <http://www.momentpoint.com/html/catalog/thd/overview.html>

The concept of a type of consciousness which interconnects the universe has been proposed in Buddhism teachings. The discovery of such ontological points of convergence between science and religion is intellectually very exciting. It holds out the possibility of creating a sacred worldview in which both science and religion would be seen as distinct yet complementary ways of exploring the same underlying reality. The *Lankavatara Sutra's* special importance in the literature of Mahayana Buddhism lies in its upholding of the perpetual importance of human consciousness. It highlights the complexity of the relationships between consciousness, mental states, physical action and their consequences. There is a surprising parallel between the teachings of Consciousness-only in the *Lankavatara Sutra* and the physical concept of reality of quantum physics. In my paper, I will make a comparative study between Amit Goswami's discourse on quantum theory and the teachings of the Consciousness-only doctrine in the *Lankavatara Sutra* to illustrate the fundamental nature of reality. I found that the theory of "the perceiver" in Ami Goswami's quantum physics corresponds with the role of Alayavijnana in the teachings of the *Lankavatara Sutra*. I hope to offer a new perspective regarding interpretation of the working of human consciousness to provide ontological status corresponding with Amit Goswami's quantum consciousness. Although the language, the focus or the discipline may vary, the conclusions of these studies have placed the same emphasis on human consciousness in its role within the holistic context of the universe.

Science within Consciousness

Amit Goswami holds that the universe is self-aware, and that consciousness creates the physical world. In his view, it must therefore be the case that the fundamental basis of reality is consciousness and that matter is a phenomenon that arises out of consciousness. Goswami calls for a new paradigm, "that 'consciousness, not matter, is the ground of all being' (*The Self-Aware Universe* 1995, 2). Consciousness is the basic element of reality—matter is secondary. This idea unifies quantum physics with "self-consciousness, free will, creativity, even extrasensory

perception” (*The Self-Aware Universe* 1995, 10-11). Amit Goswami, in chapter 11: “In Search Of The Quantum Mind,” explains his views on what he calls the brain-mind: “In the past few years it has become increasingly clear to me that the only view of the brain-mind that is complete and consistent in its explanatory power is this: The brain-mind is an interactive system with both classical and quantum components” (*The Self-Aware Universe* 1993,162). Amit Goswami makes the point that quantum physics, as a theoretical framework, explains experimental results. Yet he also states that quantum physics looks at first glance to be “paradoxical, even impossible: 1) A quantum object can be in more than once place at a time, 2) A quantum object can jump locations without passing through intervening space and 3) objects can influence each other no matter how far apart they are” (*The Self-Aware Universe* 1995, 9). He further states the essence of his thesis with this idea: “Physics explains phenomena, but consciousness is not a phenomenon; instead, all else are phenomena *in* consciousness...what [we] have to look for is a description of science within consciousness” (*The Self-Aware Universe* 1995, 215). Amit Goswami points out that in quantum physics, a particle or photon is both wave and particle, and therefore neither. In effect, based on quantum physics, there is really no such thing as a thing. The perceptions of quantum physics reveal that molecules and atoms in essence consist not of matter but of “wave functions,” which are regarded as possibilities. Quantum mechanics is about possibilities. Consciousness has an influence on these “wave functions.” Amit Goswami concludes that “the wave aspect of a single quantum object is transcendent since we never see it manifest” (*The Self-Aware Universe* 1995, 72). The wave-particle duality means that electrons can behave as waves or as particles depending on whether or not they are being observed.

Monistic Idealism

Goswami suggests that the concept of “monistic idealism” offers an approach to consciousness via the quantum domain. He claims that “monistic idealism” is “the correct philosophy for science in view of quantum physics” (*The Self-Aware Universe* 1993, 54). Goswami contends that “material realism cannot be

saved,” and that two questions must be answered: “1. Why does the macro universe look so real? and 2. Without realism how can we do science?” (*The Self-Aware Universe* 1993, 137) Goswami offers the solution that material realism be incorporated within monistic idealism. Monistic idealism is the antithesis of scientific realism. He writes: “Quantum possibilities are possibilities of consciousness itself, which is the ground of all being. This takes us back to monistic idealism. . . . Our looking is tantamount to choosing, from among all the quantum possibilities, the one unique facet that becomes our experienced actuality” (*God Is Not Dead* 22). This essentially means that individuals are creating their daily reality as they choose moment to moment among the countless possibilities available to them. As Goswami states “Quantum physics, very succinctly speaking, is the physics of possibilities” (Arntz et al., 2004). Amit Goswami heralds an emergent paradigm that differs radically from scientific materialism. Amit Goswami holds that consciousness creates the physical world. His studies have shaken our concepts of mathematics and science, demonstrating that a linear understanding of the universe is flawed. The new paradigm may be called a holistic worldview, a view of the world as an integrated whole rather than as a dissociated collection of parts. Human consciousness plays a critical role in relationships of interdependence.

There is a surprising parallel between the teachings of Consciousness-only in the Buddhism and quantum physics in terms of the nature of reality in the universe. According to the teachings of *Yogacara* Buddhism, the external world is a manifestation of the mind. Buddhism, particularly in *Yogacara* school, has long been noted for its analytical approach in the field of psychology. *Yogacara* Buddhists have formulated elaborate, sophisticated theories of the origins and nature of human consciousness to explain the basis of all activities from birth to enlightenment. The *Yogacara* school declares that all phenomenal existence is fabricated by human consciousness to enlighten sentient beings. Fabio Rambelli observes: “The basic tenet of *yogacara* epistemology is that only mind exists, and the world is the result of the articulating activity of the mind (*vijriapti-matrata*).” In his *A Science of Consciousness*, Alan

B. Wallace states that “Buddhist contemplative practice, the experiential investigation of the mind, including the nature, origins, and potentials of consciousness, is of paramount significance” (24). Alan Sponberg also concluded that Buddhism has provided “a seemingly anthropocentric perspective in its valorization of human consciousness as a necessary requisite for the universal goal of enlightenment.” In his recent book *The Heart Essence of the Great Perfection*, the H. H. the Dalai Lama writes,

Any given state of consciousness is permeated by the clear light of primordial awareness. However solid ice may be, it never loses its true nature, which is water. In the same way, even very obvious concepts are such that their ‘place’, as it were, their final resting place, does not fall outside the expanse of primordial awareness. They arise within the expanse of primordial awareness and that is where they dissolve. (48-9)

The *Lankavatara Sutra*, Consciousness-Only Doctrine

Among Mahayana scriptures, the *Lankavatara Sutra*—well known for its connection with early *Yogacara* thought and *Tathagata-garbha* doctrine as well as its great impact on Chan—deserves special attention. In terms of Consciousness-Only teachings, the text of this sutra contains almost all the main ideas in Mahayana Buddhism. The *Yogacara* School of Mahayana considers this sutra to be one of its fundamental texts, as it contains idealism-related concepts, such as Mind-only and storehouse-consciousness, which form the basis of its philosophy. That the *Lankavatara Sutra*’s special importance in the literature of Mahayana Buddhism lies in its perpetual upholding of the importance of human consciousness. It highlights the complexity of relationship between consciousness, mental states, physical action and their consequences. The *Lankavatara Sutra*, one of the earliest and most influential texts of Mahayana Buddhism, is famous for its doctrine concerning the primacy of consciousness,⁵ also known

⁵ Taken from Peter Della Santina, *The Tree of Enlightenment*, (Taiwan: The Corporate Body of the Buddha Educational Foundation. 1997) 149-55.

as the doctrine of the Consciousness-Only school (Conze 164).⁶ Consciousness-Only means that all aspects of phenomenal existence are fabricated by consciousness. All objects in the external world are just “representations” of our consciousness. External objects do not exist in reality, but only in the mind (*Cittamatra* 唯心所見),⁷ so they are “Consciousness-only.” In other words, all the manifold objects of the world, including the names and forms of experience, are merely manifestations of the consciousness. In this sutra, Mahamati the Bodhisattva-Mahasattva praises the Buddha and asks one hundred and eight questions of the Buddha, who replies with the statement that all things are nothing but Mind. The sutra states:

Further, Mahamati, according to the teaching of the Tathagatas of the past, present, and future, all things are unborn. Why? Because they have no reality, being manifestations of Mind itself, and, Mahamati, as they are not born of being and non-being, they are unborn. (*Lankavatara Sutra* 55)

Stressing the sole reality of consciousness, the doctrine of Consciousness-Only is the most important tenet of the *Vijnanavada/Yogacara* school (唯識/瑜伽) in Mahayana Buddhism.⁸ This truth explains why the *Lankavatara Sutra* was a critical source for the development of the *Vijnanavada* as revealed in the *Ch'eng Wei-Shih Lun* (成唯識論) of Hsuan Tsang

⁶ In Buddhism, Consciousness-only or Mind-only is a theory according to which unenlightened conscious experience is nothing but false discriminations or imaginations. According to the interpretation from Wikipedia: “the notion of consciousness-only is an indictment of the problems engendered by the activities of consciousness. This was a major component of the thought of the school of Yogacara, which had a major effect on subsequent schools after its introduction in East Asia.” In my thesis, the term Consciousness-only school would be mainly applied instead of Mind-only. My usage of this term corresponds with my primary argument which stresses the function of consciousness working playing a critical role.

⁷ Take reference to this essay: M. Alan Kazlev, The *Vijnanavada* Conception Of “Consciousness-Only” 17 May 2007 <<http://www.kheper.net/topics/Buddhism/consciousness.htm>>.

⁸ See: Santina, Peter Della. “*Vijnanavada*: The Origin and Development of *Vijnanavada*,” 16 Mar. 2008 <<http://www.kheper.net/topics/Buddhism/Vijnanavada.htm>>.

(玄奘).⁹ Having figured prominently in the development of Zen Buddhism, the *Lankavatara Sutra* was translated from Sanskrit into Japanese by the foremost master of Zen, Daisetz Teitaro Suzuki. Moreover, he has translated this sutra, using the Sanskrit text, into an English version, which is the main text of the *Lankavatara Sutra* I use for my study.

The core of the religious statements of the *Lankavatara Sutra* is the central Mahayanist doctrine, which includes the twofold egolessness (二無我), the three *Svabhavas* (三自性), the five *Dharmas* (五法), the eight *Vijnanas* (八識), *Alayavijnana* (阿賴耶識) and *Tathagata-garbha* (如來藏識) and self-realization (自證聖智) and *Cittamatra* (Consciousness-only) (惟心). The sutra says:

At that time, Mahamati the Bodhisattva-Mahasattva made a request of the Blessed One, saying: Pray tell me, Blessed One; pray tell me, Sugata, concerning the distinguishing aspects of the five Dharmas, the [three] Svabhavas, the [eight] Vijnanas, and the twofold egolessness. By [recognising] the distinguishing aspects of the twofold egolessness, I and other Bodhisattva-Mahasattvas will be able to establish those truths while effecting a continuous development through the various stages of Bodhisattvahood. It is said that by these truths we can enter into all the Buddha-truths, and that by entering into all the Buddha-truths we can enter even into the ground of the Tathagata's inner realization. (193-194)

The System of Eight *Vijnanas*

The system of eight *vijnanas* is the framework of the epistemological construction in the *Lankavatara Sutra*. It attempts to explain all the phenomena of cyclic existence and the working of eight *vijnanas* also expounds how everything is based on consciousness-only theory. Each dharma is a mental construct with a specific process that interacts with all eight

⁹ See: Hsuan Tsang, Cheng' Wei-Shih Lun: The Doctrine of Mere-Consciousness trans. Wei Tat, (Hong Kong: Ch'eng Wei-Shih Lun Publication Committee, 1973).

consciousnesses. Our perception and knowledge are merely the function and representation of the working of eight consciousnesses. The system of eight consciousnesses, and the mental *dharmas* which arise from and are dependent upon them, was developed as an important element of a psychological experience. External reality is non-existent, because the objects appearing to ordinary beings are created by consciousness through a complex interplay of articulation and organization.

The Consciousness-Only doctrine of the *Lankavatara Sutra* describes the mind as a system of seven active *vijnanas* which develop out of the eighth *vijnana*. The first five *vijnanas* are the perceptual awareness of the eyes, ears, nose, tongue and body. These five *vijnanas* are varieties of perceptual consciousness. They comprise the visual, auditory, olfactory, gustatory, and tactile senses. These senses arise from the perceived division of the eighth *vijnana*. The five perceptual *vijnanas* are: eye *vijnana*, seeing and perceiving at a distance; ear *vijnana*, hearing and perceiving a distance; nose *vijnana*, smelling and perceiving through contact; tongue *vijnana*, tasting and perceiving through contact; and the consciousness of the body, or tactile feeling. This fifth *vijnana* perceives through contact. Each specific form of the five *vijnanas* arises in conjunction with particular factors. For example, the visual *vijnana* arises dependent on the eye and visual forms. That is, when an object appears in a sense field, impinging upon its respective sense organ, a moment of eye *vijnana* arises. A visual object is the kind of stimulus which can impinge upon an eye. Sense objects and sense organs are thus correlatively defined. The same is true for all modes of four other *vijnanas*: the auditory, olfactory, gustatory, and tactile *vijnanas*. "The Vijnana is originated by ignorance, deed, and desire, and keeps up its function by grasping objects by means of the sense-organs, such as the eye, etc., and by clinging to them as real" (*Lankavatara Sutra* 60-61). Both sense faculties and sense objects are merely manifestations of *vijnanas* (consciousnesses). As Suzuki has explained in the introduction to his translation of the *Lankavatara Sutra*:

Vijnana is the faculty of distinguishing or discerning or judging. When an object is presented before the eye, it is perceived and judged as a red apple or a piece of white linen; the faculty of doing this is called eye-vijnana. In the same way, there are ear-vijnana for sound, nose-vijnana for odour, tongue-vijnana for taste, body-vijnana for touch, and thought-vijnana (*manovijnana*) for ideas—altogether six forms of Vijnana for distinguishing the various aspects of the external or internal world. (Suzuki, *Lankavatara Sutra* Introduction xxi)

Roger Zim, in his essay: “The Basic Ideas of Yogacara Buddhism” says: “[None] of the five perceptual consciousnesses contain the potential for making moral distinctions, so they are of indeterminate nature.” Chen-Kuo Lin has also observed that: [as] conditions of perception, the five sense faculties and the five sense objects have never been examined as to their ontological status” (“The Magic of Consciousness”). The sixth *vijnana* is a cognitive processing center. Perceptions from the first five consciousnesses are assimilated in the sixth consciousness. Cognition and perception take place in the sixth consciousness. All arise depending upon the concomitance of their respective organs with their corresponding classes of stimuli.

Manas, The Seventh Vijnana

The seventh *vijnana* is called *Manas* in Sanskrit [末那]. It is the center of egotism for each individual. The term *manovijnana* has been rendered in various ways. K.N. Jayatilleke has called it “internal perception” or “introspection” in his *Early Buddhist Theory of Knowledge* (436). Walpola Rahula, another leading scholar in the field of early Buddhism, translated it as “mental consciousness” (*What the Buddha Taught* 23). According to *The Oxford Dictionary of World Religions*, “[it] is the rational or intellectual faculty of the mind, both in the positive sense of actively producing feelings or wishes, and in the negative sense of passively ordering reality based on habit and conditioning” (609). When *Manas* begins to operate, a system of the *Vijnanas* manifests itself. It is thus called the

“object-discriminating-vijnana” (Vastu-prativikalpa-vijnana 分別事識) (Suzuki, *Studies in the Lankavatara Sutra* 190). In the *Lankavatara Sutra*, we read: “[the] Manovijnana is meant for the objective world where causality prevails as regards forms, appearances, conditions, and figures” (20). As the eye-vijnana reflects on the world of forms and the ear-vijnana on that of sounds, “[the] function of Manovijnana is by hypothesis to reflect on Manas. As soon as Manas evolves the dualism of subject and object out of the absolute unity of the Alaya, Manovijnana and indeed all the other Vijnanas begin to operate” (Suzuki, *Studies in the Lankavatara Sutra* 191). The *Lankavatara Sutra* states:

Along with this system of the five Vijnanas, there is what is known as Manovijnana [i. e., the thinking function of consciousness], whereby the objective world is distinguished and individual appearances are distinctly determined, and in this the physical body has its genesis. But the Manovijnana and other Vijnanas have no thought that they are mutually conditioned and that they grow out of their attachment to the discrimination which is applied to the projections of Mind itself. Thus the Vijnanas go on functioning mutually related in a most intimate manner and discriminating a world of representations. (40)

Manas is not, however, an independent agent acting on the Mind (*Citta*) from the outside, it is a creation of the mind itself. *Manas* depends on the Mind for its existence, and at the same time the Mind takes *Manas* as the object of its activity. “Without *Manas* there will be no mentation, and without mentation *Citta*’s own existence will not be known. The one, thus, gives support to the other, and at the same time is supported by the other” (Suzuki, *Studies in the Lankavatara Sutra* 250). As a result, “*Manas* is always found in company with Manovijnana. When reference is made to Vastu-prativikalpa-vijnana (分別事識), it includes both *Manas* and Manovijnana” (Suzuki, *Studies in the Lankavatara Sutra* 191). Some psychologists regard the seventh consciousness as the

mind's sub-conscious. Manas is "the source of ego-thought (aham-kara), of the 'I am' illusion (asmi-maya). In relation to modern psychology the *manas*-activity will be mainly situated in the sub-conscious, which makes it so difficult to point to or to fathom."¹⁰ Thus the *Manasvijnana* is the root ego that sustains self-consciousness. When we use it to perceive objective matters and phenomena in the external world from a subjective point of view of "self", we develop an illusory belief that a self-identity exists. As a result, *Manovijnana* is understood to be the center of the I-consciousness, creating the distinction between subject and object. It plays the role of thinking on a self-centered basis. "Mano-vijnana then functions as the centralizing factor for thought and experience . . . This stage of consciousness is the working of discursive, conceptual, discriminative thought"¹¹. As the result of "self-centered" perception, selfish thoughts arise. Suzuki comments: "When we admit that the six *Vijnanas* are fundamentally conditioned by the principal of individuation, we admit the existence of Manas" (Suzuki *Studies in the Lankavatara Sutra* 196). The seventh *vijnana* thus obscures a person's true nature with the ego concept of "I." According to Shuichi Yamamoto, in contrast to these six layers of "consciousness" that deal with the external world,

...the "seventh (*nana-shiki*)" or the "manas consciousness (*mana-shiki*)" discerns the inner spiritual world. Basic awareness of self originates at this level. The "passionate attachment (*shuuchaku*)" to the "ego (*ga*)," which functions to create "evil karma (*aku-go*)," is also the working of this "seventh consciousness. (171)

Manavijana grows to become the source of great calamity when it creates desires based upon its incorrect judgments, such as when it believes in the reality of an ego-substance and becomes attached to it as the ultimate truth. The reason is that *Manavijnana* is not only "a discriminating intelligence, but a

¹⁰ For more discussion, see Yogacara and Vasubandhu. [Buddhist philosophy](http://www.akshin.net/philosophy/budphilyogacara.htm). 30 Mar. 2008 <www.akshin.net/philosophy/budphilyogacara.htm>.

¹¹ *ibid.*

willing agency, and consequently an actor (Suzuki, *Studies in the Lankavatara Sutra* 191).” *Manavijnana* also defiles the eighth *vijnana* by attributing its characteristics to a real “self” that exists in space and time. “*Manas* is that which within *citta*, or *alayavijnana*, obscures true knowledge, or stains the *citta* with false ideas” (Rahula, “*Alayavijnana* – Store Consciousness”).

Alayavijnana, the Eighth Vijnana

The *Lankavatara Sutra* expounds that everything is consciousness only, and that this consciousness is divided into eight sections. Suzuki further explains:

The *Manas* backed by the *Alaya* has been the seat of desire or thirst (*trishna*), karma, and ignorance. The seeds grow out of them, and are deposited in the *Alaya*. When the waves are stirred up in the *Alaya*-ocean by the wind of objectivity—so interpreted by the *Manas*—these seeds give a constant supply to the uninterrupted flow of the *Vijnana*-waters. (Suzuki, *The Lankavatara Sutra* Introduction xxiv-xxv)

Manas and the *Alaya* exist in a close relationship to each other. “The function of *Manas* is essentially to reflect upon the *Alaya* and to create and to discriminate subject and object from the pure oneness of the *Alaya*” (Suzuki, *Studies in the Lankavatara Sutra* 190). In reality *Manas* is only the individualization process that originates in the storehouse consciousness (*Alayavijnana*) through the working of karmic activity.

The *Alayavijnana* itself “remains unmoved, retaining its identity” (Suzuki *Studies in the Lankavatara Sutra* 192). *Manasvijnana* is present as individual empirical consciousness while *Alayavijnana* is a sort of universal consciousness. Though it is pure and immaculate in its original nature, it allows itself to be affected by *Manasvijnana*, the principle of individuation. The discrimination of mind from body, sense from sense organ, etc. is the detrimental activity of *Manasvijnana*. The results of these activities in turn suffuse *Alayavijnana*, stimulating old memories while the new one finds its affinities

among them. Thus the dualism of subject and object is created, which results in the appearance of a world of particular objects (Suzuki, *Studies in the Lankavatara Sutra* 197). However, *Alayavijnana* is beyond the dualisms of subject and object, or existence and non-existence. Since it does not make distinctions, and is neither good or bad, “the eighth consciousness is said to have the state of equanimity.”¹² In the *Lankavatara Sutra*, *Alayavijnana* is presented as the reservoir of things good and bad, but it is also understood as neutral and not conscious of itself, since there is as yet no differentiation in it. In the sutra, we read:

That Mind in itself has nothing to do with discrimination and causation, discourses of imagination, and terms of qualification (*lakshya-lakshana*); that body, property, and abode are objectifications of the *Alayavijnana*, which is in itself above [the dualism of] subject and object; that the state of imagelessness which is in compliance with the awakening of Mind itself, is not affected by such changes as arising, abiding, and destruction. (*Lankavatara Sutra* 38)

this understanding, “[the] Alaya is not an individual object of experience but is universal in its nature” (Suzuki, *Studies in the Lankavatara Sutra* 196). According to Hsuan Tsang's treatise, “the universe in the plurality of its forms is the self-manifestation of the *Alayavijnana* (*Tathata* as Absolute Consciousness).”¹³ Suzuki also comments: “In the case of *Alayavijnana*, there is no discrimination in it, no intellection; for it simply accumulates all the impressions, all the memory-seeds (*bija*) that are produced and left behind by the activities of the other *Vijnanas*” (Suzuki, *Studies in the Lankavatara Sutra* 176). *Alayavijnana* is originally ethically “neutral.” “So long as it is not stirred up by *Vishaya*, the principle of individuation, it

¹² Zim, Roger. BASIC IDEAS OF YOGACARA BUDDHISM. 1995. 19 May 2008 <<http://online.sfsu.edu/~rone/Buddhism/Yogacara/basicideas.htm>>.

¹³ For more discussion related to this concept, see Brown, Brian. Toward a Buddhist Ecological Cosmology. 28 Mar. 2007 <<http://www.nembutsu.info/brown01.htm>>.

will remain tranquil, retaining its original purity or neutrality, inefficiency, aloofness, and the primary quality of not being contaminated by defilements” (Suzuki, *Studies in the Lankavatara Sutra* 180). Yet according to Suzuki’s further observations, *Alayavijnana* of the *Yogacara* is not the same as that of the *Lankavatara Sutra* and the *Awakening of Faith*. “The former conceives the *Alaya* to be purity itself with nothing defiled in it whereas the *Lanka* and the *Awakening* make it the cause of purity and defilement” (Suzuki, *Lankavatara Sutra* Introduction xl).

Now let us further look at the notion of *Alayavijnana*. The word *Alaya* is derived from the verb root *a-li*, meaning “come close to, to settle down upon, to stoop.” Thus it means “a house, a dwelling, a receptacle” (Monier-Williams 154). Accordingly, *Alayavijnana* is usually translated as “storehouse-consciousness,” implying that this consciousness contains and preserves all past memories and potential psychic energy within its fold. In *Alayavijnana*, everything is stored, good and bad, “in a state of quiescence and potentiality, but no discrimination, which latter, however, appears with the initiation of *Manas*” (Suzuki, *Studies in the Lankavatara Sutra* 195). In the *Lankavatara Sutra*, Buddha explained to Mahamati the close relationship between *Alayavijnana* and the path to Nirvana:

Further, Mahamati, those who, afraid of sufferings arising from the discrimination of birth-and-death, seek for Nirvana, do not know that birth-and-death and Nirvana are not to be separated the one from the other; and, seeing that all things subject to discrimination have no reality, imagine that Nirvana consists in the future annihilation of the senses and their fields. They are not aware, Mahamati, of the fact that Nirvana is the *Alayavijnana* where a revulsion takes place by self-realisation. (55)

According to the “Consciousness-only” doctrine in the *Lankavatara Sutra*, there is nothing separate or independent from the eight consciousnesses. The world is our perceptual construct. An analysis of the unenlightened mind will show

different levels of perception which are based in a storehouse consciousness, *Alayavijnana*, containing the karmic seeds of former actions. In this sutra, Buddha tells Mahamati:

The Vijnana is originated by ignorance, deed, and desire, and keeps up its function by grasping objects by means of the sense-organs, such as the eye, etc., and by clinging to them as real; while a world of objects and bodies is manifested owing to the discrimination that takes place in the world which is of Mind itself, that is, in the *Alayavijnana*. By reason of the habit-energy stored up by false imagination since beginningless time, this world (*vishaya*) is subject to change and destruction from moment to moment. (*Lankavatara Sutra* 60-61)

“Good” and “evil” seeds will determine the condition of *Alayavijnana* in the future world. Although it does not create karma itself, *Alayavijnana* functions as the object of retribution for past intentional activities. “Karma released from the fault of being and non-being abides with the Alaya” (*Lankavatara Sutra* 264). Then how are the “seeds” in the store-consciousness transformed into sensory and mental perceptions? *Alayavijnana*, where all the results of one’s mental and physical activities are accumulated, does not stand outside the *Vijnana* system. As described in the *Lankavatara Sutra*, “While matter and Vijnanas pass into annihilation, karma abides with the being of the Alaya which is not destroyed, whereby there is the union of matter and Vijnanas” (*Lankavatara Sutra* 264). In the six-fold perceptions resulting from the system of *Vijnanas*, there exists a cycle of mutual causation: the object-in-perception results from the actualization of “seed”, and conversely the “seeds” result from the activities of the six-fold perceptions.

“As thus they cling, there is a reversion to ignorance, and they become tainted, karma born of greed, anger, and folly is accumulated. As karma is accumulated again and again, their minds become swathed in the cocoon of discrimination as the silk-worm; and, transmigrating in the ocean of birth-and-

death (*gati*), they are unable, like the water-drawing wheel, to move forward” (*Lankavatara Sutra* 194-95).

The ongoing sprouting of karmic seeds gives us belief in the reality of our senses, our body, and the external world which we know via a process of five mental operations. “The differentiation is caused by Manas, the defiling Vijnana as it is sometimes called” (Suzuki, *Studies in the Lankavatara Sutra* 196). The sutra states: “Because of the influence of habit-energy that has been accumulating variously by false reasoning since beginningless time, what here goes under the name of *Alayavijnana* is accompanied by the seven *Vijnanas* which give birth to a state known as the abode of ignorance” (190). Suzuki points out that “[the]Manas backed by the Alaya has been the seat of desire or thirst (*trishna*), karma, and ignorance. The seeds grow out of them, and are deposited in the Alaya” (Suzuki, *The Lankavatara Sutra* Introduction xxiv-xxv). Karmic seeds produce the perceptions (*vijnana*) of such things as our eyes and ears. Our incorrect interpretations caused by *manas* lead us to interpret them as physical objects, separating them from the mind. This act (*karma*) of interpretation plants a new seed (*bija*) to be incorrectly interpreted the next time perception occurs. Each perception-moment “perfumes” and leaves its own seed in the store-consciousness which causes the next perception-moment to arise. As a result, in given conditions, a “seed” can be actualized and transformed into an object-in-perception which, in turn, by the activities of the other seven consciousnesses, leaves its residual force in the store-consciousness. “Ignorance, desire, and karma—they are the causes of mind and its belongings” (*Lankavatara Sutra* 230).

The Working Process of the Eight *Vijnanas*

In Buddhism, the system of the eight *vijnanas* was developed as an important part of a pragmatic psychology. The analogy of the ocean, wind, and waves describes how the non-dualistic condition of mind leads to a fragmented condition, characterized by the eight empirical consciousnesses as we experience them in daily life. In the *Lankavatara Sutra*,

Alayavijnana is described as a great ocean "in which the waves roll on permanently but the [deeps remain unmoved; that is, the Alaya-] body itself subsists uninterruptedly, quite free from fault of impermanence, unconcerned with the doctrine of ego-substance, and thoroughly pure in its essential nature" (190). Owing to this universal nature of *Alayavijnana* all the individual *Manasvijnana* are capable of reflecting one and the same universe and of engaging in discussion. The *Lankavatara Sutra* compares the *Alayavijnana* to the ocean:

With the Manovijnana as cause and supporter, Mahamati, there rise the seven Vijnanas. Again, Mahamati, the Manovijnana is kept functioning, as it discerns a world of objects and becomes attached to it, and by means of manifold habit-energy [or memory] it nourishes the Alayavijnana. The Manas is evolved along with the notion of an ego and its belongings, to which it clings and on which it reflects. It has no body of its own, nor its own marks; the Alayavijnana is its cause and support. Because the world which is the Mind itself is imagined real and attached to as such, the whole psychic system evolves mutually conditioning. Like the waves of the ocean, Mahamati, the world which is the mind-manifested, is stirred up by the wind of objectivity, it evolves and dissolves. (109)

Alayavijnana is also known as the "repository of impressions." If *Alayavijnana* is imagined as a vast ocean, then the seven other consciousness are waves on its surface. The seven are not separate from the eighth, nor do they disturb the stillness of its depths; all eight are essentially one. In its depths the ocean is tranquil, just as is the storehouse consciousness in its depth. Moved by the wind, the surface of the ocean is stirred into waves, which roll on and on. Similarly, the tranquil depths of the storehouse consciousness are disturbed by the wind of discrimination, causing waves, which are analogous to the functioning of the six empirical consciousnesses. With this process, the whole universe comes into existence with its multitudinous forms and with its endless entanglements. This ocean of *Alayavijnana* is disturbed by the wind of the particularizing principle, psychologically known as *Manas* and

epistemologically as *Vishaya* (境界) (Suzuki, *Studies in the Lankavatara Sutra* 196). The principle of particularization is known as “*Vishaya*,” “which comes from the root *vish* meaning ‘to act,’ ‘to work’; and with the rise of this wind of action, the waves are agitated over the tranquil surface of the mind” (Suzuki, *Studies in the Lankavatara Sutra* 174). The waves, however, will be seen ruffling the surface of the ocean of *Alayavijnana* when the principle of individuation known as *Vishaya* blows over it like the wind. “The waves thus started are this world of particulars where the intellect discriminates, the affection clings, and passions and desires struggle for existence and supremacy” (Suzuki, *Studies in the Lankavatara Sutra* 190). “So the flood of the *Alayavijnana* is always stirred by the winds of objectivity (*vishaya*), and goes on dancing with the various *Vijnana*-waves” (*Lankavatara Sutra* 230-231). When the system is in full swing, we cannot distinguish one *Vijnana* from another; they so intimately interact; and the mirroring *Alayavijnana* is not distinguishable from the discriminating *Manasvijnana* and from the other *Vijnanas*; neither is the mirroring *Alayavijnana* distinguishable from the discriminating *Manasvijnana* and from the other *Vijnanas*. In our psychological life the whole *Vijnana* system is engaged and we cannot easily talk individually of its components.

A Perceiving Being in Quantum Physics

In this paper, I intend to make a comparative study between Amit Goswami’s discourse on the theory of a “perceiving being” in quantum physics and the function of *Alayavijnana* in the *Lankavatara Sutra* to illustrate the fundamental nature of reality. Now I will further explain how a perceiving being is developed in Amit Goswami’s quantum theory. Through quantum physics, we can better see the connection between scientific, objective descriptions of our world, and the world of subjective human experience. According to quantum physics, the existence of matter is dependent on the existence of a “perceiver.” Goswami is convinced that the universe, in order to exist, requires a conscious sentient being to be aware of it. Without an observer, he claims, it only exists as a possibility. He suggests that there is

a transcendental realm which is the source of both material and mental phenomena. Goswami, in a chapter "The Reconciliation of Realism and Idealism," states: "I propose that *the universe exists as formless potentia in myriad possible branches in the transcendent domain and becomes manifest only when observed by conscious beings*" (Italics in the original.) He further states:

Once we recognize that biological mutation (which includes the mutation of prebiotic molecules) is a quantum event, we realize that the universe bifurcates in every such event in the transcendent domain, becoming many branches, until in one of the branches there is a sentient being that can look with awareness and complete a quantum measurement. (*The Self-Aware Universe* 1995, 141)

An observer's perception is essential in order for possibility to manifest as actuality. When the observer looks, only then does the entire thing become manifest, including time. Goswami emphasizes two aspects of quantum physics: "1) quantum objects, as waves, are interpreted probabilistically, 2) observation is inseparable from reality – how we observe a quantum object determines what we observe" (*The Self-Aware Universe* 1995, 45). Goswami further expands on this insight:

Naturally we project that the moon is always there in space-time, even when we are not looking. Quantum physics says no. When we are not looking, the moon's possibility wave spreads, albeit by a minuscule amount. When we look, the wave collapses instantly; thus the wave could not be in space-time. It makes more sense to adapt an idealist metaphysic assumption: There is no object in space-time without a conscious subject looking at it (*The Self-Aware Universe* 1993, 59-60).

Goswami's position is that "quantum mechanics sides with idealism in saying that it is impossible to calculate the trajectory of a quantum object because a trajectory does not exist, only possibilities and observed events exist!" (*The Self-Aware Universe* 1993, 115) Corresponding with this argument of a required perceiver's position, in his paper "Integral Science:

Toward a Comprehensive Science of Inner and Outer Experience,” Thomas J. McFarlane writes: “In terms of quantum physics, the independent existence of objects arises in association with the projection of the state vector which transforms the system from a state of potentia to a state of actuality.” Jeffrey M. Schwartz, a neuroscientist and professor of psychiatry from the University of California, described this conclusion emerging from the Copenhagen Interpretation: “No phenomenon is a phenomenon until it is an observed phenomenon” (274). Jeffrey M. Schwartz included these lines regarding the fact demonstrated by quantum physics in his book *The Mind and the Brain*:

The role of observation in quantum physics cannot be emphasized too strongly. In classical physics [Newtonian physics], observed systems have an existence independent of the mind that observes and probes them. In quantum physics, however, only through an act of observation does a physical quantity come to have an actual value (264).

In summary, in quantum mechanics, all conventional interpretations depend on the existence of a “perceiving being.” (Roger Penrose 1031). For students of quantum physics, the perceiving being cannot be ignored because it is fundamental in selecting present reality from the probability field. There is no objective, material reality outside the observers. Individuals are literally, moment to moment, creating reality. As Nick Herbert notes, “The basis for most quantum theories of consciousness is that mind enters the material world via the leeway afforded by Heisenberg’s uncertainty principle. To the extent that matter is uncertain, mind can have a say in the motion of matter by selecting which quantum possibilities are realized” (171).

A Perceiving Being and the Working of Alayavijnana

Dan Lusthaus, a specialist in *Yogacara* Buddhism, emphasizes the importance of the working of human consciousness in terms of one’s ontological status. Lusthaus

has insightfully observed that Buddhism, from the earliest Pali sutras all the way through Zen and Pure Land, stresses one central theme: "Buddhism is concerned with Seeing, not Being" ("*Ch'an and Taoist Mirror*" 170). According to this argument, one's way of knowing the world, or the means of one's perception, constitutes one's existential condition. A person's epistemological construction thus determines his or her ontological development. Lusthus has further declared: "Buddhism, in all its forms and schools, consistently points to the inseparability of epistemology and ontology - if anything, it emphasizes the dependence of ontology on epistemological construction ("*Ch'an and Taoist Mirrors*" 170). Lusthaus's arguments on ontological positions of Buddhism regarding "seeing" correspond, to some extent, with Amit Goswami's idea of "a perceiver" in the theory of quantum physics. According to quantum physics, the existence of matter is dependent on the existence of a "perceiver." Amit Goswami is convinced that the universe, in order to exist, requires a conscious sentient being to be aware of it. An observer's perception is essential for possibility to become actuality. Goswami's conception of the role an observer plays in quantum physics echoes the function of *Alayavijnana*. In the *Lankavatara Sutra*, the principal component of consciousness is *Alayavijnana*, which functions as the basis for the seven other consciousnesses. As previously mentioned, the six superficial consciousnesses are based on *Manovijnana*, which is the center of I-consciousness, creating the distinction between subject and object. Yet this process is only possible because of the existence of a still deeper consciousness, *Alayavijnana*, store of sign-seeds, acting recursively on perception, on the interaction of the mind with the world. As the discriminating agency, *Manas* and all other six *Vijnanas* are dependent on the *Alayavijnana*. When it is working, all the other *Vijnanas* are in action. *Alayavijnana* is the reservoir of all ideas, memories and desires and is also the fundamental cause of both *Samsara* and Nirvana. *Alayavijnana* contains the karmic seeds of former actions. *Alayavijnana* is thus seen as the "karmic" storehouse which contains seeds generated by the unenlightened actions of sentient beings. In addition to being the direct causes and manifestations of suffering, those karmic seeds bind sentient beings in perpetual

rebirth, obstructing the attainment of liberation. Seeds produce the phenomenal world, but at the same time the phenomenal world affects *Alayavijnana*, sowing new seeds. The seeds of past actions automatically ripen into the form of mental phenomena which we believe to be external events. From *Alayavijnana* arise all of our ideas of self, ego, and their respective functions in the external world.

When Science Meets with Religion

In both Amit Goswami's quantum physics and the teachings of consciousness-only in the *Lankavatara Sutra*, the universe is regarded as having its origins in – and in essence consisting of – consciousness, from which matter arose and continues to arise. This radical new perception represents a change in the world-view that has long been at the foundation of the whole of Western science. This new perception, in which consciousness should be seen as real and fundamental a factor as space, time and matter and in fact more fundamental than the other factors, not merely a paradigm shift but a meta-paradigm shift. Physicist Fred Alan Wolf summarizes this new view as follows:

Basically, we're looking at a process in which the ultimate source of everything ... transforms consciousness into matter. Once this happens, matter inherently acts as a kind of reflection or mirror of the intelligence from which it sprung. As matter modifies itself over time in an ongoing evolutionary process, new information and intelligence continues to be reflected in an ever-evolving universe. (qtd. in *Experiencing the Soul* 2.)

In the old Western science, consciousness is assumed to be brain-based. According to Amit Goswami's arguments, a brain-based consciousness conflicts in a major unsolvable manner with quantum physics. So science is undergoing a paradigm shift. In this new paradigm, the model of consciousness-only teaching in Buddhism is found to be the right way to think about consciousness. Thus this paradigm is paving the way for an integration of science and spirituality, of

the modern West and the old East. In quantum physics, science and religion converge into one tapestry. In Goswami's view, science and religion can integrate to rescue humanity from an over-emphasis on materialism: "I propose that science and religion in the future perform complementary functions -- science laying the groundwork in an objective fashion for what needs to be done to be done regain enchantment, and religion guiding people through the process of doing it" (*The Self-Aware Universe* 1993, 216). In Goswami's eyes, the integration between the new quantum physics and religion forges a new mode for people to follow: "In the new science, which infuses a new worldview, we draw upon science and religion and ask practitioners of both to come together as co-investigators and co-developers of a new order" (*The Self-Aware Universe* 1993, 224). Science has already come to a higher understanding of the new paradigm. The emerging paradigm takes into account a perceiving being, known as the observer, as well as the observed, and the fact that the two cannot be separated. According to Amit Goswami's quantum physics, there is no objective, material reality outside individuals, the observers. Individuals are literally, moment to moment, creating reality. In this sense, quantum physics adds a new element to the notion of free will and, in turn, personal responsibility. As stated above, *Alayavijnana* is the "karmic" storehouse that contains seeds generated by the unenlightened actions of sentient beings and is the fundamental cause of both *Samsara* and Nirvana. By transforming *Alayavijnana* into wisdom and by envisioning something better, individuals, the "perceiving beings" can create new realities for themselves. This paradigm should become the basis for new education systems, new information policies, and means of building relationships between people, nations, social groups, etc. This "paradigm shift" with respect to the nature of reality creates the possibility of a self-empowered existence where individuals have enormous influence over their lives. As Fred Alan Wolf states, "Are people affecting the world of reality that they see? You bet they are! Every single one of us affects the reality that we see!" (Arntz et al., 2004). Amit Goswami comments that if ordinary people really realized that consciousness and not matter is the link which connects people with each other and the world, then

“their views about war and peace, environmental pollution, social justice, religious values, and all other human endeavors would change radically” (*The Self-Aware Universe* 1993, 8).

References

1. ARNTZ, W., Chasse, B., & Vicente, M. (2004), (Directors/Producers): [Motion Picture], *What the Bleep Do We Know!?*. Portland, OR: CapriBowker, John, ed. *The Oxford Dictionary of World Religions*. New York: Oxford University Press, 1997.
2. CONZE, Edward, *Buddhist Thought in India*. Ann Arbor: The University of Michigan P, 1973.
3. DAMASIO, Antonio R., *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt, 1998.
4. GOSWAMI, Amit, *The Self-Aware Universe: How Consciousness Creates the Material World*. Tarcher/ Penguin Books, 1995.
5. _____, “Can science and religion be integrated?” 30 Jan, 2011. <<http://www.amitgoswami.org/science-religion-integrated/>>
6. _____, *God Is Not Dead: What Quantum Physics Tells Us about Our Origins and How We Should Live*. Hampton Roads, 2008.
7. HERBERT, N., *Elemental mind: Human consciousness and the new physics*, New York: Dutton, 1993.
8. H. H. the Dalai Lama, *Dzogchen: The Heart Essence of the Great Perfection*, Trans. Geshe Thupten Jinpa and Richard Barron. Ithaca, NY: Snow Lion Publications, 2000.
9. HSUAN Tsang, *Cheng’ Wei-Shih Lun: The Doctrine of Mere-Consciousness*. Trans. Wei Tat. Hong Kong: Ch’eng Wei-Shih Lun Publication Committee, 1973.
10. JAYATILLEKE, Kulatissa Nanda, *Early Buddhist Theory of Knowledge*. London: George Allen & Unwin, 1963.
11. KAZLEV, M. Alan, “The Vijnanvada Conception Of ‘Consciousness-Only’”, 17 May 2007, <<http://www.kheper.net/topics/Buddhism/consciousness.htm>>.
12. LEBHERZ, Herbert G., 2 Feb, 2011. <<http://brassringbooks.com/store4/normbk2.htm>>.
13. LIN, Chen-Kuo, “The Magic of Consciousness: an Inquiry into the Concept of Object in Yogacara Buddhism”, *Philosophy of Science and Education Chinese and European Views*. Ed. Vincet Shen, Tran. Van Doan and Fritz Wallner. 9 (1995): 17-28.
14. LIN, Chen-Kuo, “Encounter with the Imagined Other: A Yogācāra-Buddhist Critique”, *Journal of the Center for Buddhist Studies* 1 (1996): 235-50.

15. LUSTHAUS, Dan, "Ch'an and Taoist Mirrors: Reflections on Richard Garner's 'Deconstruction of the Mirror'", *Journal of Chinese Philosophy*, 12 (1985): 169-78.
16. MCFARLANE, Thomas J., Ed. *Einstein and Buddha: The Parallel Sayings*, Berkeley: Seastone, 2002.
17. MONIER-WILLIAMS, Monier, *A Sanskrit-English Dictionary Etymologically and Philologically Arranged with Special Reference to Cognate Indo-European Languages*, New York: Oxford UP, 1963.
18. ROSEN, Eliot Jay, *Experiencing the Soul: Before Birth, During Life, After Death*, Carlsbad, CA: Hays House, 1998.
19. SANTINA, Peter Della, *The Tree of Enlightenment*, Taiwan: The Corporate Body of the Buddha Educational Foundation, 1997.
20. SANTINA, Peter Della, "Vijnanavada: The Origin and Development of Vijnanavada" 16 March 2007, <http://www.kheper.net/topics/Buddhism/Vijnanavada.htm>.
21. SCHWARTZ, Jeffrey M. and Sharon Begley, *The Mind and The Brain: Neuroplasticity and the Power of Mental Force*. Regan Books, 2003.
22. STRONG, John S., *The Experience of Buddhism: Sources and Interpretation*, 2nd ed. Belmont, CA: Wadsworth, 2001.
23. RAHULA, Walpola, *What The Buddha Taught*, Grove Weidenfeld: New York, 1959.
24. WALLACE, B. Alan, "The Scientific and Contemplative Exploration of Consciousness", *Network: The Scientific and Medical Network Review*, Dec., 2002, No. 80, pp. 18-19.
25. _____, "A Science of Consciousness: Buddhism", *The Pacific World: Journal of the Institute of Buddhist Studies*. 3.4 (2002): 15-32.
26. _____, "The Buddhist Tradition of Samatha: Methods for Refining and Examining Consciousness." *Journal of Consciousness Studies* 6.2-3(1999): 175-87.
27. _____, "The Intersubjective Worlds of Science and Religion." In *Science, Religion, and the Human Experience*. Edited by James Proctor. New York: Oxford University Press, 2005.
28. WERNER, Sattmann Frese, *Sustainable Living for a Sustainable Earth: From an Education for a Sustainable Development Towards an Education for Sustainable Living*. Diss. University of Western Sydney, 2005.
29. WHITAKER, Justin, "The Buddhist Philosophy of Mind." *Buddhist Psychology*, 495 (n. d.): n. pag.
30. WOLF, Fred Alan. *Mind into Matter: A New Alchemy of Science and Spirit*, Moment Point Press, 2001.
31. YAMAMOTO, Shuichi. "Mahayana Buddhism and Environmental Ethics: From the Perspective of the Consciousness-Only Doctrine", *Journal of Oriental Studies* 11 (2001): 167-180.
32. ZIM, Roger, "Basic Ideas of Yogacara Buddhism", 19 May 2008, <<http://online.sfsu.edu/~rone/Buddhism/Yogacara/basicideas.htm> >.