Ji-ji-muge and Economics of Enlightenment

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"*In the Perfected Mahayana (i.e Kegon) everything, every speck of dust even, can be seen as conditioned arising. Thus even in a hair there are innumerable golden lions*" **from the Tractate of the Golden Lion**

1. Phenomenological Roots of Human Alienation

It has become commonly accepted that the world we live in - is an extremely troublesome place. Even in times of relative stability, it is dangerous politically, socially stratified and depressing because of its overwhelming econo-political systems, and consumer-unfriendly mechanisms. Many may believe that human civilization is a huge economic and technological success, but through methods that most people will find disturbing, frightening, and disorienting — because, for one reason alone, these methods are incomprehensible to most people and will keep changing. It is for most people like playing a game in which rules are constantly changed without ever being made clear — a game which one cannot abandon without loss (remember A. Camus' tragic statement, that humanity has but one choice — to commit suicide or not?!), and in which one can never return to an older form of a game.

It is also becoming increasingly obvious, that the problem of conflict between man and the outside world was almost always stated in wrong terms. The root of the problem is usually in the way in which people feel and conceive themselves as human beings, their sensation of being alive and their individual existence and identity. Most people have the sensation that 'they' are individually separate centers of feeling and action, living inside and bounded by the physical body (skin encapsulated ego). Most have a feeling of being lonely, abandoned and very temporary visitors in this universe. However this feeling is very much in conflict with almost everything known about man in the modern sciences. It is also contradictory to the fundamental teachings of Buddhism in the Mahayana sutras.

This pessimistic view is, in fact, an illusion coming from a distorted and false sensation of our own existence as living organisms. The obvious consequence of this illusion is that

Western (and to increasing extent also Eastern) attitude to the world 'outside' is largely hostile. Tricked into the illusion of being an independent, responsible source of action, people cannot understand why, what they do, never comes up to what they should do. Man feels chronic guilt and attempts most heroic efforts to placate his conscience. This also is also the *root* of Christian aspirations to convert every Hindu or African into a huge materialistic market society, where every Tamil and Bantu has a privilege to join Western consumer rat-race, engaging in endless competition for better education to get a better paid job to buy more things to enable him to better educate his children to … join the rat race

It became a very common practice for contemporary man to define himself in terms of other people's successes, socially or politically accepted standards, and economic thresholds. Martin Buber, the eminent Hassidic scholar once said: " *If I am I because you are you, and if you are you because I am I, then I am not I and you are not you*". Thus, if men define themselves in terms of what is 'other', no matter whether they see themselves above or below the others they fall in another illusion.

People are forever 'conquering' nature, space, mountains; fighting wars, corporations are competing with other corporations; there is even a spirit of 'healthy competition' among schoolchildren, members of the same corporation, even family members. The sensation of "*I*" as a lonely and isolated and endangered center of being is so powerful and commonsensical, and so fundamental to people's modes of speech and thought, so entangled in Western laws and socio-economic institutions, that we cannot experience selfhood except as something superficial in the scheme of the universe.

Western people got this sense of personality because they were educated according to medieval scholastic traditions, which in turn were rooted in Aristotle's logic, Jewish and Christian theosophy — ideas which have caused man to feel that the universe of nature — the physical world — is *not* himself. That people are somewhat temporary outsiders in this planet who are destined or obliged to conquer the 'hostile' environment. A view expressed in W. Blake's poem:

"I, a stranger and afraid in the world I never made".

The idea that external nature is hostile to man and to human interests is generally based upon the fact of death, which is regarded as an evil. The universe eventually erases our physical existence, like Chronos, who devoured his own children. But if life is good, then the

fate of death is balanced by the gift of life, which also comes from the universe, just as Chronos procreated his children. There is a reason to believe, that Nature conspires to produce life with the same resourcefulness that she then devotes to destruction of the forms of life. This being the case, has the expression "a hostile, lifeless Universe" any meaning?

This notion of separateness from the 'outside' world traditionally included:

1. The idea that the world is made up of separate things (Greek Philosophy, Judaism, Christianity, Islam) ;
2. That individual organisms are totally or partially controlled be some independent egos (Judeo-Christian traditions)
3. That the opposites such as white/black, war/peace, good/evil, are in actual conflict which may result in some permanent victory of one of the poles (as above);
4. That death marks the end of individual and that life must always be in opposition to death (many religions);
5. Than man is put at the top of all creatures and must assume control of nature (Judaism, in particular with its idea of chosen people and Christianity)

It is no surprise that in time with the advancement of sciences, human rights and personal freedoms — the old axioms proposed by the traditional religions were deemed to fall. More and more people with critical minds became to question the fundamental — logical and factual contradictions contained in the holy scriptures, and no longer could accept myths, which were in obvious conflict with human intelligence, education and common sense. In this context, it is to the great benefit to the advancement of human thought that the concepts which are philosophical roots of Buddhism offer an alternative answer to the most fundamental questions people ask such as "Who am I?", "What am I doing here", "What is the purpose of life?" More importantly, Buddhist philosophical concepts seem to be in accordance not only with common sense but also with the scientific method. They do not rely on any stylized doctrines, and the subsequent need to defend them in view of changing social conditions and environments. Buddhism does not create any myths, and last but not least, is also tolerant to the other, often conflicting, schools of thought.

Some may argue that any scholastic discussion of Buddhism may be a contradiction in terms because, by making conceptions and doctrines about things, one tends to become attached to them. One is liable to start believing instead of knowing. They say in Zen

Buddhism: "*The doctrine of Buddhism is a finger pointing at the moon. Do not mistake the finger for the moon*". And Buddha chopped off the finger and undermined all metaphysical beliefs.

There are many dialogues in the original Pali Canon (Theravada Buddhism), where people try to corner Gautama into a metaphysical position. "*Is the world eternal?*". Gautama says nothing. "*Is the world not eternal*?". Gautama says nothing. "*Is the world both eternal and not eternal*?" "*Is the world neither eternal nor not eternal*?". Gautama maintains a noble silence. Sometimes called the thunder of silence because this metaphysical silence is not a void. It is very powerful. This silence is the open window through which one can see not concepts, not ideas, not beliefs, but the very goods. But if one says what it is that one sees, one erects an image and an idol, and one misdirects other people. It is better to destroy people's beliefs than to give them beliefs. It may hurt but it is the Way.

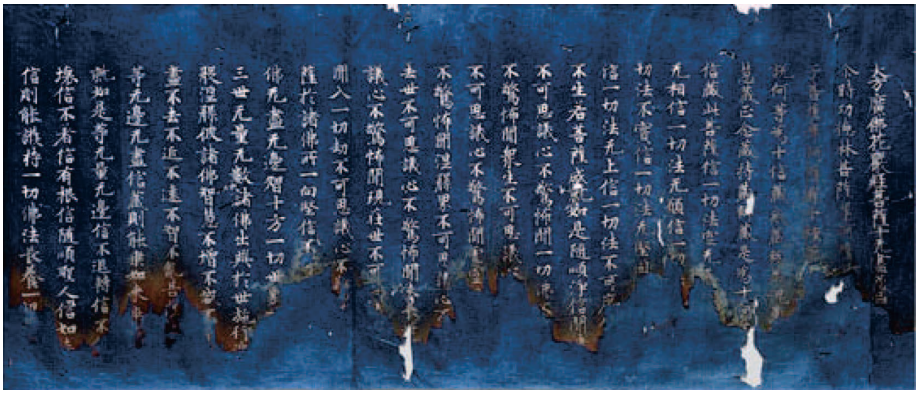
With this short introduction I wish to acknowledge that some who adhere closely to the Buddhist method may believe in futility of any academic dispute of Buddhism, at least within conventional Cartesian modes. This perhaps might be regarded as incompatible with the Eastern tradition with its emphasis on intuition and non-verbal communication. However, Buddhism belongs to the whole humanity, and remembering Buddhist practice of *upaya* (skillful means), it should and could be 'explained' in many ways which are best suitable to all. Although I do not deny that Eastern ways of teaching Buddhism may have been attractive and sufficiently exotic for some Westerners — the vast majority of the new Buddhists in the West prefer formal instruction in line with the Western conventional logic and methodological tools they trust and understand. This is why, I believe, there is also a need for more formal analysis of the Buddhist doctrine.

I wrote this essay for two principal reasons. In the first place, I wished to draw attention to the ancient Buddhist idea of great relevance to contemporary world, which is largely unknown in the West, and is increasingly and undeservedly neglected even in the Buddhist but 'westernized' East. Second, by engaging closely with interdisciplinary nature of the topic, writing an essay helps me to clarify and refine, even to modify, my own ideas.

In this essay I wish to present some notes on the importance of *ri-ji-muge* and *ji-ji-muge* concepts, which originated from the Kegon Sutra and their relevance to contemporary science. I begin with the origins of the Kegon Sutra, and then proceed to the concept of *ji-ji-muge* and *ri-ji-muge,* and then apply these concepts to the contemporary Buddhist schools of Tendai, Shingon and particularly to Zen and Jodo Shin-shu. The term of economics of

enlightenment refers to the effectiveness of these concepts in attaining wisdom and enlightenment as applied by various Buddhist schools. I attempt to present and discuss *ji-ji-muge* in the context of the fundamental Buddhist idea of dependent arising which has been initially taught by Gautama, (the historical Buddha), and then presented in the Mahayana sutras. I will focus on one aspect of the principle of dependent arising which is taught in the Kegon-sutra known in Japan as the *ri-ji-muge* and *ji-ji-muge* relationship Finally, I will discuss relationship between contemporary sciences and the *ji-ji-muge*

2. The Origin of the Mahayana Teaching



Kegon-kyo Sutra

known as “Nigatsudo Yakegyo”
Nara Period, 8th century
Silver on dark blue paper
20 sheets 549 lines, handscroll

Nearly every Buddhist school regards the order in which the Buddha Gautama taught his instruction in various ways. The following is The Five Periods of Classification of the instructions of the Buddha, according to the *P’ an Chiao* of *Chi’i* - the Great Master of the Dharma, *T’ien T’ai* (China, 538–597), that demonstrate the vastness of the teachings of the Buddha as well as the relevant Buddhist schools formed in Japan (see table below).

Japanese Schools of Buddhism and Mahayana Sutras

No.	Name of Period:	Total Years taught:	Sutras revealed:	Characteristics of the period's teaching:	Corresponding Japanese Buddhist Schools:
1	**Kegon**	21 days	**Avatamsaka Sutra** (Kegon Sutra, Flower Garland Sutra).	These doctrines first taught by the Buddha after his enlightenment under the Bodhi tree, and considered only second in complexity to the Hokke-Nehan teachings and the Madhyamika doctrines.	**Kegon School**
2	**Agon** (*Rokuon*: Deer Park)	12 years	**The 5 Agama Sutras of the Pali Canon:** 1) ***Digha-nikaya*** (the Long-Length Sutra); 2) ***Majjhima-nikaya*** (the Medium Length Sutra); 3) ***Samyutta-nikaya*** (the sutra of relative subjects); 4) ***Anguttara-nikaya*** (the sutra of numerical doctrine); 5) ***Khuddaka-nikaya*** (the minor sutras).	The Vinaya (the monastic rules) related to suffering, emptiness, impermanence and egolessness expounded in order to emancipate people from the six lower realms of hell, hunger, animality, anger, humanity and heaven.	The Theravadan, and Vinaya Saravastivada Schools of: **Jojitsu School** **Kusha School** **Ritsu School** **Shingon-Ritsu School**
3	**Hoto**	8 years	1) **Shomon (Shrimala) Sutra**; 2) **Gejimatsu Sutra** (Revelation of the Profound and Secret Teaching); 3) **Yuima (Vimalakirti) Sutra**; 4) The 3 Pure Land Sutras of: **Muryoju Sutra, Amitayus Sutra** (the Buddha of Infinite Light) and **Amida Sutra**; 5) The 3 Esoteric Sutras of: **Dainichi Sutra, Kongocho Sutra** and **Soshitsuji Sutra**.	The introductory Mahayana doctrines such as, non-substantiality, *alaya*-consciousness, Pure Land and esoteric (Tantric) teachings. This period contains the largest volume of expounded sutras.	**Hosso School** **Ji School** (Pure Land, founded by Ippen Shonin) **Jodo School** (Pure Land, founded by Honen Shonin) **Jodo Shin School** (True Pure Land, founded by Shinran Shonin) **Shingon School** **Shingon-Ritsu School** **The Zen Schools: (Rinzai-shu, Soto-shu, Obaku-shu)**
4	**Hannya**	22 years	**Hannya Sutra** (The Wisdom Sutras) that include: **Makahannya Haramitsu Sutra** (The Sutra of the Perfection of Wisdom), **Hannya Shin-Kyo** (The Heart Sutra, or the Essence of the Prajna-Paramita Sutra)	These sutras were taught at Rajagriha, the Jetavana Monastery, the Bamboo Forest Monastery, and other areas. These sutras compose the advanced level of Mahayana, expose the supreme wisdom and non-substantiality doctrines (the nullifying of existence), and are studied and practiced by many Japanese schools.	**Sanron School**
5	**Hokke-Nehan**	8 years	1) **The Threfold Lotus Sutra Sutra** of: **Muryogi Sutra** (Sutra of Infinite Meaning), **The Lotus Sutra and Fugen Sutra**; 2) **The Nirvana Sutra**	The final instructions of the Buddha that negates all the previous preliminary and preparatory doctrines, reveals the origins of the Buddha's illumination, and the potentiality in every being to become a Buddha.	**Nichiren-shu** (and other Nichiren schools) **Tendai School**

The basic text of Kegon (Chinese *Hua-yen*) is the Avatamsaka Sutra, and the Kegon school of Buddhism has been, under Emperor Shomu, the leading one in Japan (with Todaiji Temple in Nara). Its influence has been carried on in a number of later schools, particularly in Zen and Jodo Shinshu. The Avatamsaka Sutra is one of the most influential scriptures in East Asian Buddhism. The title is rendered in English as *Flower Garland Sutra*, *Flower Adornment Sutra*, or *Flower Ornament Scripture*.

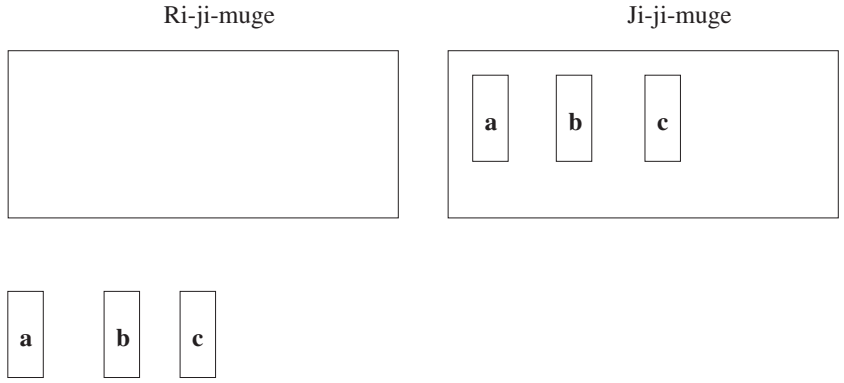
Of the various themes stressed in Avatamsaka sutra it describes a cosmos of infinite realms upon realms, mutually containing each other. The vision expressed in this work was the foundation for the *Hua-yen* school of Chinese Buddhism (known as Kegon in Japan), which was characterized by a philosophy of mutual interpenetration. The sutra is also well known for its detailed description of the course of the bodhisattva's practice through fifty-two stages.

3. Concept of *ri-ji-muge* and *ji-ji-muge*

Three full Chinese translations of the Avatamsaka Sutra were made with fragmentary translation probably begun in the second century CE commonly known as the Ten Stages Sutra (十地經), and often treated as an individual scripture,. The first complete Chinese version was completed by Buddhabhadra around 420, the second one by Śik□ānanda around 699, and the third one by Parjñā around 798. The last chapter of the Avatamsaka is known as a separate text - the Gandavyuha Sutra. These texts are the origin of the *ri-ji-muge* and *ji-ji-muge* concepts.

Ji is things, events, the concrete and particular whereas *Ri* (a, b, c) is principle, reason, abstract, totality. *Ji* is discrimination. *Ri* is non-discrimination, non-distinction. *Ri* equates with *shunyata*, the Plenum-void, and *Ji* with *rupam* (closest term would be *matter*), form. The relationship of *R*i and *Ji* is "perfect, unimpeded mutual solution" *(en-yu-muge). Ri = Ji and Ji = Ri*. They are modes or aspects of an undivided unity. They are mutually in a perpetual state of suchness.

Now, all *Ji* being *R*i, if **a = X**, and **b = X**, then **a = b**. Therefore, **a** as an apple, and **b** as a boat are one. This is *Ri-ji-muge*, the inter-diffusion of *Ji* with *R*i. The relation between a and b is still indirect, i.e., via the common denominator, *R*i. Thus the doctrine of *Ri-ji-muge*, propounded by the Tendai School of Buddhism, is not regarded as the highest conceivable, much less the highest truth.



Most scholars (McGovern, Suzuki, Bachelor, Watts) agree on its great impact on the formation of Buddhist ontology. In particular Zen makes a special point of that of the Dharmadhatu (*hokka*i) i.e. the Fourfold Universe as the field of Dharma and Realm ofAbsolute Truth. The all-encompassing space without beginning, out of which all phenomena arises. The Sanskrit term means "the essence of phenomena" and the Tibetan means "the expanse of phenomena" but usually it refers to the emptiness, which is the essence of phenomena. Universe is the collection of all things in time and space. Yet Dharmadhatu is neither limited by space nor by time. There are boundless sorts of states, that are beyond the sphere of time and space; there are also limitless objects and events that are not within the sphere of time and space. Dharmadhatu transcends any limitation; it is much more comprehensive than the universe. This theme is developed in the following way[1)]

Ji-hokkai or the World of Things

Ri-hokkai: the Noumenal World. Sunyata: The World of the Absolute Principle: The World of Zen: Egolessness: Unity with the Great Self

Rijimuge hokkai: The Harmonization and Unification of the *ji-hokkai* and *Ri-hokkai*: the Principle of Things Without Obstruction: Phenomenal and Noumenal Worlds as identical

Jijimuge hokkai: the Realm of the Harmonious Interpenetration of All things with Each other, Indra's Net. The Absolute as One Whole: The Eternal, Self-

1) See. A. Watts, "Self and Other" and other lectures; D. Suzuki: *"Essence of Buddhism*", "*Introduction to Zen*" and "*Zen and Japanese Culture*" and other essays; S. Batchelor "*Buddhism Without Beliefs — A Contemporary Guide to Awakening*", Riverhead Books, New York, 1997; W. McGovern: "*Buddhism and Religion*", Picador Press, London, 1996. Also W. McGovern *Introduction to Mayahaya Buddhism*, London, 1994

Recreating Play of the Absolute

Ri-ji-muge literally means "things, things unimpeded," According to Shinya Kasugai: *It is "un unimpeded inter-diffusion of all particulars*." (S. Kasugai:"*Kegon — The Supreme Phenomenon*", Dharmakaya, 1966) The intellect can conceive it, but only the intuition helps to understand the process of transcending *ri* into *ji* (*Ri-ji-muge*). The Kegon school states that this doctrine is not that of the true immanence of the Universal Buddha.

Ji-ji-muge means "Phenomenon-Phenomenon-Undivided", or the direct identity in essence of all phenomena. This concept is, conceptually, an aspect of the fundamental Buddhist idea of dependent arising and a relative concept is also known in Vedanta philosophy as "non-duality" (*advaita*) to distinguish it from simple uniformity. In the latter one it is not mere oneness as opposed to multiplicity, since both terms are themselves polar. In Vedanta, the dualistic term "non-duality" is taken to represent the "dimension" in which explicit differences have implicit unity. Although it may seem that *advaita* and *ji-ji-muge* describe similar phenomenon (i.e. non-duality) Vedanta view is closer to the early pre-Mahayana philosophy of Vaibhasika and Sautrantika rather than to Madhyamika and Yogacara which are today commonly accepted as conceptual foundations of Mahayana Buddhism.[2)]

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2) This is according to Dalai Lama. However, classifications of four philosophical schools of Buddhism depend on criteria used by different scholars. For example, Tibetans generally classify tenet systems into four broad categories Vaibhasika, Sautrantika, Yogacara, and Madhyamika. In reality the systems are much more diverse. The source of the views of the Vaibhasika and Sautrantika come primarily from the Abhidharmakosa by Vasubandhu and commentaries. The Yogacara from Maitreya, Asanga and Vasubandhu and the Madhyamika from Nagarjuna and Aryadeva. There is a classification of Madhyamika into Svatantra and Prasanga. The former stems from Bhavaviveka, Santiraksita and Kamalashila and the latter from Buddhapalita and Chandrakirti. The Gelug and perhaps others, place Dignaga and Dharmakirti between Sautrantika and Yogacara. They call their writings which seem to affirm the true existence of external objects Sautrantika following reason and those writings which seem to deny the true existence of external objects Yogacara following reason. The classifications are largely (not entirely by any means) Tibetan ways of organizing the varied teachings. For instance, Tibetans also use the term Vaibhasika to refer to the original 18 schools which include Theravada. In reality the 18 schools often had very distinctive ideas and did not consider themselves as one. It should be pointed out that the Abhidharma teachings in Theravada are quite a bit different than those in the Abhidharmakosa. The term Vaibhasika as used by Vasubandhu is restricted to one of the 18 schools which existed in Kasmir and produced a work called the Mahavibhasa (Great Commentary). This work exists now in Chinese but was never translated into Tibetan. For more information of this nature see Jeffrey Hopkin's chapter on Tibetan Doxography in *'Tibetan Literature, Studies in Genre'* published by Snow Lion, New York, 2002

According to the Kegon teachings, when applied to human activity *ri-ji-muge* denotes seeking for the Buddha in the mind. The *ji-ji-muge* concept denotes looking for the Universal Buddha in the body. Following out the former idea, the flesh is regarded as a shackle imprisoning the enquiring spirit, so that by retiring from the world one should reduce it to proper submission and thereby obtain enlightenment. With the *ji-ji-muge* concept, however, illumination can be found only through perfecting flesh by bringing out its latent potentialities and thereby uncovering the Buddha hidden in the human heart. When applied this concept to the Mahayana schools of Buddhism, one may say that *ri-ji-muge* is the Way of Sitting (Zazen in Soto), while *Ji-ji-muge* is the Way of Moving in the World. (see P.K. Eidmann'"*The Lion Roar*", Jodo Publishing, 1947 also various books by Kegon scholars such as Shinya Kasugai, Ryosho Takamine)

The emphasis on Mahayana is necessary here as most scholars believe that simply mechanical moving in the world is not enough — this would mean just mechanical moving. Here a Theravadian Buddhist would be aware of the *ji* as separate from each other, but in order to experience *ji-ji-muge* two conditions must be satisfied:

1. Compassion *(karuna*, jap. *Jih*i)
2. The Vow of Bodhisattvahood (*pranidhana*, jap *Gan*).

Only after these two conditions are satisfied one realizes that 'no thing exists'; that is the negative side, and simultaneously the positive side must also be realized, (this is what Vedanta calls *tathata)*. Here, the synthesis of the Hindu Way of *neti neti* (not this not this) and *iti iti* (it is here, it is here) has been reached. Original Ramakrishna's teaching, that one must mediate on cleansing oneself of connection to the ego before transcending to connection with Brahman, can also be applied to the Buddhist Way. What is new here is that Kegon follows the *iti iti* with Compassion and the Vow as the "effective means" to Enlightenment

The Kegon School went further, insisting on direct relation between all "things." In the Buddhist sense, things are but flowing events or '*minor whirlpools on the surface of becoming*'. *Ri-ji-muge* seeks the Buddha (the universal) in the individual mind, the body being regarded as a devil whose limitations prison the wings of spirit. *Ji-ji-muge*, on the other hand, the final stage of the Kegon School (and thought can go no further), with its doctrine of the direct inter-diffusion of all *Ji*, means finding the Universal Buddha in every particular thing. The implications of this doctrine are enormous. In the words of Hindu philosophy,

"*Thou art that*," and all other "thou's" are equally that.

So far, the mind can follow with ease. But according to *Ji-ji-muge*, all "thou's," or apples or boats, are not only that but directly each other, completely and altogether. Two points on the circumference of a circle, instead of merely looking to the self-same center, are at the center all the time. This means, of course, that the circle folds up, as it were, into the Void of the Un-manifested. So it does, and there is no need to be fearful of it. The Universe manifests on the 'intersection' of Space and Time, and the circle, whose center is nowhere and its circumference everywhere, is the field of the world around us (compare it with the time-space unified field theory discussed later)..

In the world of *Ji-ji-muge*, when you and I, and he and she are *one*, even though we never cease to be ourselves, what is the rationale for compassion or love for one's fellow beings? Love, one may say, is cosmic glue. It sticks together the parts of the whole until we realize that, being one, they do not need sticking together. One may even wonder that someday love would die when people realize that, like God, it is a superfluous idea. He who has glimpsed the mystery of *Ji-ji-muge* just knows himself to be one with all humanity, all things, all life, and acts accordingly all work and viewing is practice. This idea of normal life and path as "practice" is precisely what, in Zen Buddhism (according to D. Suzuki) has seemed to be its most important trait.

4. Kegon in Japanese Buddhism

According to P. K. Eidmann (ibidem), Kegon is the fundamental doctrine of all truly Japanese Buddhism. All of the specifically Japanese schools (Tendai, Shingon, Jodo-shu, Jodo-shin-shu, Nichiren-shu) may be characterized as manifestations or aspects of Kegon. It is also suggested that Japanese art developed mainly out of Kegon and Jishu (the Kegon view) and it seems to be the most influential in contemporary Japanese Buddhism thought.

Originally the doctrine of *Ch'an* (Jap. Zen) had no Kegon. Its basic text was Diamond Sutra though some believe that it was Lankavatara Sutra, not the Diamond Sutra which formed the basis of the doctrine of the Sixth Patriarch *Hui-neng (*jap. *Eno*). It was *Hui-neng*'s disciple, *Cheng ti*, (Jap *Chokan*), who introduced Kegon into *Ch'an (Zen*) Buddhism.

When transferred and later on developed in Japan, Zen developed two streams. *Soto* Zen which is formally the way of *ri-ji-muge*, formal meditation and monastic practice; and *Rinzai* Zen that follows Kegon way of *ji-ji-muge*. Originally *Soto* followed the Northern Ch'an with

its emphasis on sitting meditation and 'gradual way' to enlightenment. *Rinzai* followed *Hui-neng's* Southern School with its emphasis on sitting, standing, walking and sleeping meditation (i.e. activity and openness to the 'outside' world) In fact, both *Soto and Rinzai* stress practice — not philosophy. When practicing, one attains *satori* (enlightenment) — but at this point the distinction between the two streams of Zen becomes superficial. From the Kegon point of view Soto seems to be in the category of *ri-ji-muge* while Rinzai — is *ji-ji-muge* although from the Zen point of view this distinction is rather nonsensical.

Closely related to the Kegon interpretation of *ji-ji-muge* is the doctrine of Three Bodies which gained great interest among Western scholars of Japanese Buddhism. This in turn, formally, belongs to the *Prajnaparamita* (Perfect Wisdom) Sutra teachings. Originally this sutra played relatively very little role in shaping Japanese Buddhism apart from the *Hosso* school (*Hosso* is today a very minor school of Buddhism in Japan). Brought to Japan by Dosho ca AD 664 it was related to Chinese *Fu-hsiang* and Indian Yogacara schools. Although *Dengyo* (Tendai-shu) knew about *Prajnaparamita* and wrote related commentaries, his followers ignored the original text.

From all contemporary schools of Buddhism, Zen seems to be the closest to the Three Body view of the *Prajnaparamita*. Jodo Shinshu gives the Buddha seven bodies, classifying them as four with three subheadings. Tendai uses a four-body system, but it resembles the Tibetan system of seven bodies. Nichiren is a two-body system. Shinran's two-body system is different from his four-body system. Another two-body system is of the *Mahasanghika*, one of the early Buddhist schools that pushed for the inclusion of not only priestly members, but also all classes in the practice of Buddhism (in this sense it can be regarded as a precursor of what is now regarded as Mahayana Buddhism). In the Sarvastivadinsastra (jap. *Daibibasharon)* — another proto-Mahayana school — a one body system is proposed. In general various schools of Buddhism view the Buddha as having various aspects. *Prajnaparamita* — influenced schools, such as Tibetan Vajrayana and Zen Buddhism, which give Buddha three aspects or bodies; the transformation or emanation body, the reward body or enjoyment body, and the dharma or truth body. Other schools have different ideas. The parallel Christian approach of human mind/body ("two-bodies") or "three-body" system of mind/body/spirit or the "three-person - one God" is formally, although not in substance, similar to the Buddhist concept.

The scholastic method so much esteemed in the West is not popular in Japan and that kind of theorizing on various connections and homologies on various bodies of Buddha is usually

eschewed with recommendation:: *Do not try to connect*!. These connections do exist in the Western traditions, and can be found in the early works of the European scholars. Georg Cantor's (German mathematician of the XIX century) algebraic concept of infinity as an acceptable but impossible-to-resolve abstraction was indeed based on Kegon concept of the infinite.[3)]

Interestingly, Kegon was interpreted rather differently in another Japanese Buddhist school, Jodo-Shinshu. Here *ri* is *tariki* ("the other power") and *ji* is the individual. The two are united in the moment of awakening of faith, i.e. realization of:

Ichi soki issai,	one is the same thing as everything
Issai soku ichi	everything is the same thing as one.

From here, one may note that Jodo Shin-shu has an aim, and it is a psychological one. According to *Sukhavati-vyucha* (Jap. *Dai-kyo*), the dual aim is *anshin* (peace of mind), and *san shin ichi shin* (the realization that the three essentials are one). These three are: earnest thought, faith serene, and desire for nirvana. In Amitabha-jjnana Sutra (Jap. *Kan-gyo*) similar distinction can be found although with different statement of aims. In Jodo Shin-shu the fundamental characteristic of the attitude of one who has attained the Awakening of Faith and lives in it is: gratefulness to the world — to the tea, the teacup, the table, everything — which has made and makes existence and enlightenment possible. Compared with the Christian approach to religion — this very idea of religion as an 'organic' gratefulness has permeated Japanese Buddhism, and is comparatively a very distinctive phenomenon. Therefore in other religions there is no real equivalent of the true *myokonin*, i.e. humans, who have attained the awakening of faith and live in it (the only exception to this rule is possibly the ideal of the Tao and the Hindu attaining *moksha*).

In context of the Shin-shu ideal, one may observe that, the aim of the Theravada Buddhism (*arahat* ideal) is to achieve egolessness through realizing that the self is egoless; the self is Buddha; whereas, the aim of the Mahayana's Shinshu is to achieve egolessness through realizing that the universe is egoless; the Universe is Buddha: and I am egoless by participation (compare with *ri-ji-muge* and *ji-ji-muge*). The Theravada can be thus defined as psychological and the Mahayana metaphysical in its stress — yet the aim is the same —

3) see G. Cantor, *The Infinite of Mathematics*, circa 1880. Few people realize that contemporary computer languages are based on Taoist, pre-Cha"n (Zen) book of *I Jing*.

egolessness. Western observer may add that, Jodo Shin-shu returns to the psychological position, while preserving the vocabulary of metaphysics. On the other hand, Zen remains totally metaphysical.

One of the obvious, though not very often emphasized derivatives of the awakening to *ji-ji-muge* is that there is no difference between the physical and the spiritual. These are out-of-date categories originated in ancient Greece and prominent in Christian transcendental ontology. In fact life is a process or pattern likened by A. Watts to a '*dance of energy*'. The place of individual ego in the 'chain of energy' can be best described with the *reduction ad absurdum* method. Here again a Buddhist anecdote may be reminded: When Bodhidharma (jap. *daruma*) came to China a student came to him and asked that his mind be pacified.

"*Show me your mind and I will pacify it*" said Bodhidharma.
When the student answered that he could not find his mind, Bodhidharma answered
"*See, it is already pacified*".

Similarly if one looks for some particular center of being which is separate from his own, he/she will not be able to find it. The idea of separateness of "I" and the rest is just a conventional neurological experience.

This is, in my view, perhaps the most important ontological aspect of the *ji-ji-muge*. The world is in an urgent need for a new definition of human existence free from the myths of the ancient ages, where human being was regarded either as an alien oddity (mechanic materialism), a combination of three form/substances (i.e. spirit/mind/body in Kabalistic Judaism), double-form creation (i.e. spirit/body in Christianity) creation, or a fluke on a very unimportant planet located in a solar system at the edges of the universe (positivists). *Ji-ji-muge* helps to realize that "*I*" am just an extension of the city where I live , and so is everything out to the farthest galaxies that we have, or will have, any knowledge of, and beyond. In other words, that the human body, like any 'substance' belongs in a continuous energy system which is co-existent and co-extensive with the whole universe

Here, a well known anecdote may be reminded:

A Christian lady saw a Buddhist praying. "*What are you praying for*?"
"*Nothing*"
And "*Whom are you praying to*?"

"*None*"

The lady moved away. The Buddhist got up and said to her:

"*And, Madam, there is no one praying*"

5. Ji-ji-muge and Modern Science

The history of relationship between science and religion, and in particular between Christianity and scientific method has been marred by open hostilities. Since XX century religious beliefs and modern science maintain an uneasy truce only occasionally interrupted by open conflicts .Conflicts still arise because science and religion are two very different disciplines. They are based on very different foundations:

Science is ultimately based on observation of nature. Scientists assume that things happen because of natural causes. Many scientists do not believe in the existence of one or more Gods or Goddesses. Others personally believe that one or more deities exist, but assume that he/it/they do not interfere with nature. In any given area, from astrophysics to medicine and zoology, a general consensus exists about most fundamental beliefs. Arguments among scientists exist at the frontiers of each area of science, where new discoveries are being interpreted and hotly debated. The debates are eventually settled by evidence, debates, dialogue, and consultation.

Religion is largely based on faith. In the USA alone there are over one thousand religious organizations, and over 300 organized religions, (and thousands of smaller ones). They hold diverse and often conflicting beliefs concerning deity, humanity and the rest of the universe. Many consider that their own faith is the *only* completely true one. They believe that the consensus of scientists, and the beliefs of *all* other religions are at least partly false.

There is *no* simple way to resolve these conflicts because:

1. Religious beliefs are typically based on faith. Most religious people believe that, through revelation, God has taught them absolute truth. Any compromise with the beliefs of scientists would require them to reject their own religious beliefs. Very few are willing to do that.
2. Since different religions trace their beliefs back to different revelations from God, it is common for different faith groups to conflict with each other concerning humanity, deity and the rest of the universe.

3. Scientific beliefs are generally based on observation. Any compromise would require a scientist to reject hard evidence.

Reaching a consensus is generally impossible. Sometimes, debates are settled by a conscious decision to tolerate each other's beliefs. This is difficult to achieve between two groups, who are certain of the validity of their own beliefs.

The extent of cooperation between Buddhism and modern science both in terms of methods and methodologies involved as well as areas covered has been unprecedented in every way. No other religion, be it Christianity, Islam or Judaism supports modern science to such an extent as Buddhism does. And no other religion 'benefited' in popularity so much thanks to scientific method. One can even make a point that Buddhism, with its emphasis on empirical method and lack of doctrines, is not afraid of scientific discoveries, as it does not have to continuously change the interpretations of its myths and miracles which are, de facto, *condition sine qua non* of the other major religions.

In this section I will review some recent trends in modern sciences that benefited from Buddhism and were parallel to Buddhist thought. Because of the limited ramifications of this essay this review will have to be very selective and incomplete, and I refer readers to the quoted literature.

Ji-ji-muge and the quantum mechanics

When Charles Darwin proposed the crowning scientific theory of the XIX century, a wide public understood enough of it to passionately debate evolution and natural selection. But not even physicists today fully understand the similarly significant theories of quantum mechanics, first proposed in the early XX century. This particular event initiated a very dynamic interchange of ideas between Buddhist thought and modern sciences. The resulting dialogue between Buddhist scholars and a group of Western physicists and philosophers resulted in a series of new ground-breaking intellectual discoveries ranging from social sciences (psychology, sociology, economics) to 'hard' sciences such as physics, neurology, astronomy, nuclear biochemistry and others.[4)]

4) The summary of results of these dialogues are in physicist Arthur Zajonc's insightful book, "*The New Physics and Cosmology: Dialogues With the Dalai Lama*" (Oxford University Press; 246 pages; $29.95). This five-day conference at the Dalai Lama's compound in Dharamsala, India, in 1997 was not the first or

One of the best instances of this dialogue is development of correlative thinking about the relationship of organism to environment which proved to be much more compatible with the physical sciences than the archaic notion of the 'self' as something confronting an alien and hostile world. Consequently, in XXI century it would be illogical and contrary to common sense to revert to the myth of the ego as an isolated, independent observer for whom the rest of the world is external and "other". Neither modern neurology, nor biology or sociology can possibly subscribe to this XIX century idea.

Quantum mechanics is thought, even by many physicists, to be suffused with mysteries and paradoxes. The source this view can be traced to the so-called wave-particle duality of quantum physics: Physical objects, at the quantum level, seem to possess both local, reductionist particle and non-local, holistic wave properties that become manifest depending on whether the position or wavelength of the object is measured.

The two types of properties, wave and particle, are said to be incompatible. Measurement of one quantity will in general affect the value the other quantity will have in a future measurement. Furthermore, the value to be obtained in the future measurement is undetermined; that is, it is unpredictable-although the statistical distribution of an ensemble of similar measurements remains predictable. In this way, quantum mechanics obtains its nondeterministic quality, usually expressed in terms of the Heisenberg uncertainty principle. Despite wave-particle duality, the particle picture is maintained in most quantum mechanical applications. Atoms, nuclei, electrons, and quarks are all regarded as particles at some level. At the same time, classical "waves" such as those of light and sound are replaced by localized photons and phonons, respectively, when quantum effects must be considered.

Not everyone has been happy with the conventional interpretation of quantum mechanics, which offers no real explanation for wave function collapse. The desire for consensus on an ontological interpretation of quantum mechanics has led to hundreds of proposals over the years, none gaining even a dominant majority of support among physicists or philosophers. For example, physician Deepak Chopra (*Quantum Healing*, Vintage Press, NY, 1989) has promoted a notion he calls quantum healing, which suggests we can cure our ills by the application of sufficient mental power. He has used quantum mechanics to explain the idea of *one-ness* of the universe in terms of cellular photon emission, and the particle theory. Using elements of atom: proton, neutron and photon as an example of wave-particle duality, he suggested a continuous interchange of atoms in the human body. In *Quantum Healing*, (1986), Chopra offered a new paradigm for how the body handles its own rejuvenation

processes. i.e. how often does the body renew itself. Conventional wisdom had it pegged at around seven years. Chopra has revised that estimate downward to roughly one year (approximately 98% totally renewed). Based on the estimates of quantum biology, one has a brand new heart in 2 months, new stomach lining every 4 days, new skin every 30 days, a new liver in 6 weeks, even the skeleton is replaced every three months.

Using quantum biology as a derivative of quantum mechanics, to the process of healing has far-reaching epistemological consequences. If there is never-ending exchange of free particles — then everyone (and everything) in this planet and this universe participates in this process. In more conventional terms, every living creature has, in its 'body' particles which once were in the body of Buddha, Jesus Christ, Moses, or Adolf Hitler. According to the quantum biology, it takes only two weeks for the particles released from the body of South-American farmer to join body particles of any European or African man. It seems obvious, that if we logically follow this interpretation of quantum biology, not only the conventional divisions of human race based on religious and political views will become obsolete and absurd, but the whole new paradigm of the universe emerges. Universe which is one and composed, on its basic, fundamental level, of one 'substance only which is common to all its creatures.

Quantum biology seems to be supported by the fundamentals of quantum mechanics. One needs to open a standard textbook of quantum theory to read that:

> *"… the world cannot be analyzed correctly into distinct parts; instead, it must be regarded as an indivisible unit in which separate parts appear as valid approximations only in classical (i.e. Newtonian) limit. Thus at the quantum theory of accuracy an object does not have any "intrinsic" properties (wave or particle) belonging to itself alone; instead it shares all its properties mutually and indivisibly with the systems with which it interacts…. Thus under suitable environmental conditions, a bacterium can develop into a spore stage, which is completely different in structure, and vice versa".* (David Bohm, '*Quantum Theory*', Prentice — Hall, NJ, 1958)

Physics became a major area in which Science and Buddhism became to interact partly because of the Dalai Lama's inspiration, but Western scientists also had their own reasons. Because quantum physics implies an apparently determining role for the human mind on the phenomena observed, it shatters Western notions of objective reality. Tibetan Buddhism has been investigating the correlations of thought and reality for centuries. The nuanced Buddhist

ideas of "dependent arising," which explore relationships of perception, expectations and reality, were particularly intriguing to both physicists and mind scientists. The physics dialogue didn't create a new way of understanding quantum reality but did suggest a path to it. The new physics and mind science both lead quickly to questions once considered the sole province of spirituality, and also to other traditions, not only to Buddhism but, to indigenous thought such as Hawaiian, Maori and American Indian (see works by Joseph. Campbell on human myths and religions).

last of these conclaves. Since they began a decade earlier, there have been 11 discussions convened by the organization created to arrange them, the Mind and Life Institute.

One can only read the latest works of the Harvard astrophysicist Stephen Hawking in the area of the unified field theory to realize how deeply rooted in modern science is the idea of dependent arising. The idea of *one-ness* of the universe has also been supported by such new research ventures as the biofield hypothesis (living systems are complex, nonlinear, self-organizing in accordance with universal consciousness); Orch-OR model of consciousness (events arise as a feature of reduction of the quantum state); experiments in field theory of consciousness and in dimensional analysis of neurophysical process. Unified time-space quantum theory has also been supported by the analysis of cellular photon emission which suggested inter and intra-cellular collective behaviour in cytoskeletal activity.

Ji-ji-muge and the holographic theory

Of particular interest to the concept of dependent arising is the emergence of holographic theory, which may be one of the most important discoveries of the XX century.. Based on works by A. Aspect and D. Bohm it provides a complex and comprehensive view of the universe based on the holographic image. That despite its apparent solidity the universe is at heart a phantasm, a gigantic and splendidly detailed hologram.[5] It asserts that subatomic

5) To understand why Bohm makes this startling assertion, one must first understand a little about holograms. A hologram is a three- dimensional photograph made with the aid of a laser. To make a hologram, the object to be photographed is first bathed in the light of a laser beam. Then a second laser beam is bounced off the reflected light of the first and the resulting interference pattern (the area where the two laser beams commingle) is captured on film. When the film is developed, it looks like a meaningless swirl of light and dark lines. But as soon as the developed film is illuminated by another laser beam, a three-dimensional image of the original object appears. The three-dimensionality of such images is not the only remarkable characteristic of holograms. If a hologram of a rose is cut in half and then illuminated by a laser, each half will still be found to contain the entire image of the rose. Indeed, even if the halves are divided again, ↗

particles are able to remain in contact with one another regardless of the distance separating them. It happens not because they are sending some sort of mysterious signal back and forth, but because *their separateness is an illusion*. Bohm argues that **at some deeper level of reality such particles are not individual entities, but are actually extensions of the same fundamental *something*.** In addition to its phantomlike nature, such a universe would possess other rather startling features. If the apparent separateness of subatomic particles is illusory, it means that **at a deeper level of reality all things in the universe are infinitely interconnected and that objective reality does not exist.** The electrons in a carbon atom in the human brain are connected to the subatomic particles that comprise every salmon that swims, every heart that beats, and every star that shimmers in the sky. Everything interpenetrates everything, and although human nature may seek to categorize and pigeonhole and subdivide, the various phenomena of the universe, all apportionments are of necessity artificial and all of nature is ultimately a seamless web.

Bohm's theory has been applied to modern physiology and resulted in new approach to what is thought to be 'real' objectivity. For if **the concreteness of the world is but a secondary reality and what is "there" is actually a holographic blur of frequencies**, and if the brain is also a hologram and only selects some of the frequencies out of this blur and mathematically transforms them into sensory perceptions, what becomes of *objective reality*? Put quite simply, it ceases to exist. The 'separateness' and 'uniqueness' of things and the way we define them is but an illusion. Human beings are really "receivers" floating through a kaleidoscopic sea of frequency, and what we extract from this sea and transmogrify into physical reality is but one channel from many extracted out of the huge time-space superhologram.

The holographic theory of the universe has also been applied to kinetics and logistics of human brain. It is much easier to understand how information can travel from the mind of individual 'A' to that of individual 'B' at a far distance point and helps to understand a number

↘ each snippet of film will always be found to contain a smaller but intact version of the original image. Unlike normal photographs, **every part of a hologram contains all the information possessed by the whole. The "whole in every part" nature of a hologram provides us with an entirely new way of understanding organization and order.** For most of its history, *Western science has labored under the bias that the best way to understand a physical phenomenon, whether a frog or an atom, is to dissect it and study its respective parts*. A hologram teaches us that some things in the universe may not lend themselves to this approach. If we try to take apart something constructed holographically, we will not get the pieces of which it is made, we will only get smaller wholes.

of unsolved questions in psychology. According to S Grof the holographic paradigm offers a model for understanding many of the baffling phenomena experienced by individuals during *altered states of consciousness*. **It may explain why some humansunder proper conditions, can mentally assume the identity of, say, prehistoric animals, even if they had no prior knowledge of their anatomy or appearance. These experiences are not unique.** During the course of his research, Grof encountered examples of patients regressing and identifying with virtually every species on the evolutionary tree (research findings which helped influence the man-into-ape). Moreover, he found that such experiences frequently contained obscure zoological details which turned out to be accurate. Regressions into the animal kingdom were not the only puzzling psychological phenomena which Grof encountered. He also had patients who appeared to tap into some sort of collective or racial unconscious. Individuals with little or no education suddenly gave detailed descriptions of Zoroastrian funerary practices and scenes from Hindu mythology. In other categories of experience, individuals gave persuasive accounts of out-of-body journeys, of precognitive glimpses of the future, of regressions into apparent past-life incarnations.

These phenomena remained a complete mystery for physiologists and only recently the hologram theory provided a logical clue According to Grof: " *If the mind is actually part of a continuum, a labyrinth that is connected not only to every other mind that exists or has existed, but to every atom, organism, and region in the vastness of space and time itself, the fact that it is able to occasionally make forays into the labyrinth and have transpersonal experiences no longer seems so strange*".[6)]

The holographic paradigm also has implications for sciences such as biology. Psychologist Keith Floyd, has pointed out that if the concreteness of reality is but a holographic illusion, it would no longer be true to say the brain produces consciousness. Rather consciousness produces brain and its activities as well as the body and everything else around us we interpret as physical. Such a turnabout in the way we view biological structures has caused researchers to point out that medicine and our understanding of the healing process could also be transformed by the holographic paradigm. If the apparent physical structure of

6) See M. Talbot "*Holographic Principle*"; D. Bohm "*Thought as a System*", London, 1994; "*Science, Order and Objectivity*" (same author), NY Press, New York, 1987; A. Aspect, "*Particles and the Universe*", Paris, 1985; S. Grof "*Alternative Cosmologies and Altered States*", Noetic Sciences Review, Winter 1994; "*The Adventure of Self-Discovery*, University of New York Press, 1988; (same author) also "*Holotropic Mind*", Harper San Francisco, 1994. M. Talbot: "*The Holographic Universe*", Harper-Collins London,1991 See also K.Floyd in Talbot (ibidem).

the body is but a holographic projection of consciousness, it becomes clear that each of us is much more responsible for our health than current medical wisdom allows. What we now view as miraculous remissions of disease may actually be due to changes in consciousness which in turn effect changes in the hologram of the body. Similarly, controversial new healing techniques such as visualization may work so well because, in the holographic domain of thought, images are ultimately as real as "reality".

Ji-ji-muge, neuroscience and psychology

Of particular importance to the dialogue between Buddhism and science are new discoveries in neuroscience where using the latest technologies scientists were challenging old assumptions about the relationship of brain and body. Psychologists were trying to account for abilities to change physical states (such as body temperature), as specifically demonstrated by individuals adept at meditation, when such influences on the body by the mind was thought impossible. Western science had emphasized external influences and was just beginning to investigate human life from the inside. So in various disciplines loosely grouped as mind sciences, scientists were eager to experiment with more advanced meditation subjects, with the post-Jungian idea of integrated psycho-soma and incorporate human cognitive processes with the whole physical environment.[7)]

Most modern physiologists refuse to see brain and experience as isolated entities: '*there is no gap to bridge, only traces to follow*'. By allowing that human experience possesses a genuine causal agency, they are taking the subjective pole of reality seriously, something that is essential if we are to understand more fully the ways in which body and mind interact. Continuing research need not exclude consideration of those mental states which are comparatively less closely jointed to a brain. Here Buddhism, with its out-of-body

7) Several books chronicle this unique journey,. Gentle Bridges: *Conversations With the Dalai Lama on the Sciences of Mind* (Shambhala), edited by Jeremy Hayward and Francisco Varela; *Consciousness at the Crossroads: Conversations With the Dalai Lama on Brain Science and Buddhism* (Snow Lion), edited by Zara Houshmand, Robert B. Livingston and B. Alan Wallace, explains Buddhist thought, particularly in Alan Wallace's afterword. Healing Emotions: *Conversations With the Dalai Lama on Mindfulness, Emotions and Health* (Shambhala), edited by Daniel Goleman, and *Sleeping, Dreaming and Dying: An Exploration of Consciousness With the Dalai Lama* (Wisdom Publications), edited by Francisco J. Varela, delve into research in their respective subjects and pertinent Buddhist thought, while *Visions of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature* (Oxford University Press), edited by Richard J. Davidson and Anne Harrington, investigates the growing scientific interest in altruism, empathy and the psychology of violence. All these titles turn out to be at the cutting edge of science in these decades

experiences including the possibility of consciousness unlinking from a dying body and re-linking with a growing embryo is few steps ahead of science, perhaps preparing the way for new revolutionary discoveries (compare with *bardo* states in *Tibetan Book of Dying*)

Many modern biophysics seem to support the non-duality, one-ness principle. According to Edwin Schrodinger:

> *"It is not possible that this unity of knowledge, feeling and choice which you call your own should have sprung into being from nothingness at a given moment not so long ago; rather this knowledge, feeling and choice are essentially eternal and unchangeable and numerically* ***one*** *in all men, nay in all sensitive beings. But not in this sense — that you are a part, a piece of eternal, infinite being, an aspect of modification of it, as in Spinoza's pantheism … Hence this life of yours which you are living is not merely a piece of the entire existence, but is in a certain way the* ***whole****, only this whole is not so constituted that it can be survived in one single glance*" E. Schrodinger, *My View of the World*, Cambridge University Press, 1964.

Historically, the schools of psychology in the West have sought to arrive at a final analysis of what the self actually is, and thus represent the operation of the first fetter that, according to the Buddha, prevents irreversible insight: fixed self view (*satk, ya*).. Most contemporary psychologists do recognize the fragmentary and contingent nature of the empirical self. A good example will be research undertaken by William Waldron who connected the accounts of evolutionary psychology and Buddhism concerning the deeply rooted defensive predispositions erected around the sense of an independent '*I*'. Human evil and suffering are caused by attempts to secure constructed selves, often at the expense of others

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Perhaps the greatest barrier to overcome the illusion of duality is psychological. Thus when the line between 'individual' ego and what happens to this ego is dissolved and there is no stronghold left for an ego even as a passive witness, man can find himself not

in the world but as a world which is neither compulsive nor capricious. What happens is neither automatic nor arbitrary — it just happens, and all happenings are mutually interdependent. Alan Watts compares this feeling to being a leaf blown along by the wind, until one realizes that one is both the leaf and the wind. The world outside 'individual' body is exactly the same as the world 'inside; they move together inseparably, and if one feels a bit out of control it is because the world 'outside' is so much vaster than the world 'inside'. (Alan Watts, "*So What*?", Vintage Books, 1972).

Some modern psychologists connect Buddhism and evolutionary psychology, claiming that both show that negative behavioral patterns ('evil') have a big influence over long periods in evolution, being present in ourselves as inherited capacities, active all the time as predispositions. One can break such vicious, self-centered patterns by firstly, understanding the human condition, and then working to overcome their influence. The simplest Buddhist formulation of the way to emancipating enlightenment outlines three trainings: in morality, in meditation, and in wisdom. Buddhism and science makes an excellent contribution to discussing the second and third in the light of modern scientific approaches, but hardly mention the first — morality. Yet the connection between morality and scientific enterprises is a live topic in current discussions of science, mostly because of political influences originating in Judeo-Christian traditions.

Francisco Varela and Natalie Depraz. have, for some years, been making very fruitful connections between Buddhist non-dual understandings of the mind (informed by their ground-breaking work on brain states), and the work of the French phenomenologists. Having established that actual experience and the states of the brain act reciprocally upon one another, so that it is incoherent to say that brain states simply cause mental events, they showed how perception can be regarded as subsidiary to the mental function of imagination. Perception refers to what is present, imagination to what is not present, and the two mix so that in every moment they are emerging into awareness from an unconscious background, as a living present.

In XX century it was a dominant view among neuroscientists, that processes in the body manage the human mind. But Varela and Depraz have shown that one's state of mind can access local neural processes without any body interference, so that neither can be reduced to

the other. The mental state corresponds to a particular neural state, and actively incorporates or discards any contemporary neural activity in the relevant brain region, evaluating many potential neural states '*until a single one is transiently stabilised and expressed behaviourally*'

Mental states require both a phenomenological and a biological account. The neural elements and the global cognitive subject are co-determined; the subject is emergent, not just from the neural base, but also from preceding mental states. Buddhism extends this account by offering its pragmatic consequences, showing how the living present, with imagination active, is a means for human transformation.

Ji-ji-muge and modern philosophy

A crucial contribution that Buddhism can make to science is to further clarify the notion of dependent arising (Sanskrit: *pratītya samutpada*). When we observe a phenomenon, inner or outer, we can be confident that it arises and ceases through the coming together of innumerable cooperative conditions, and that it forms an element in the complex of conditions out of which new phenomena are arising. Consequently, no phenomenon exists independently, nor can it persist, since its conditions are inevitably changing. The name that we give it does not refer to any real entity, but is rather a sort of focused torch beam selecting for our attention a little patch on the shifting cloudscape of experience.

In the second half of the XX century Western philosophical concepts have been strongly influenced by the Eastern philosophies of Vedanta, Tao and in particular by Mahayana Buddhism. The latter one became especially attractive because of its 'empirical' bias and methodologies that were parallel to scientific method. Many centuries ago, the dialecticians of the Mādhyamika school of Buddhism (starting with Nagārjuna circa 300 AD) tackled Indian philosophical positions that in some ways resembled the standpoints of modern scientists. Physicists such as A. Ricard, neuroscientists and philosophers (A. Damasio, as well as William James, Karl Popper and others) attempted to work on common theory that would include scientific method and Madhyamikan dialectics

The modern physics section of Buddhism and science explores the surprising departures from down-to-earth realism that has been emerging mainly in quantum mechanics during the past century. Although mysticism is said to exist in the writings of many of the early century's prominent physicists (Wilber 1984), the XX century interest in mystical physics began in earnest with the publication in 1975 of F Capra's *The Tao of Physics* (Capra 1975). There Capra asserted that quantum theory has confirmed the traditional teaching of Eastern

mystics: that human consciousness and the universe form an interconnected, irreducible whole. Here the rigorous application of Mādhyamika epistemology to physics, promises to be far more genuinely illuminating for the practical applications in modern astrophysics.

> *To the enlightened man … whose consciousness embraces the universe, to him the universe becomes his "body," while the physical body becomes a manifestation of the Universal Mind, his inner vision an expression of the highest reality, and his speech an expression of eternal truth and mantric power*

Another impressive contribution was made by the French philosopher of science M. Bitbol. His *'Cure for Metaphysical Illusions'* is an extremely thorough, and difficult, elucidation of neo-Kantian philosophy of science, explaining how Mādhyamika approaches can build on it, and extend it radically.

Like Nagārjuna, Kant was aware of the limitations of concepts. They are only for the formal ordering of the empirical contents, a process that will never end, though reason provides an inaccessible goal of complete rational understanding to regulate the process. Unaware of this as we generally are, it is easy to take the form that our intellect gives to phenomena as being the form of the things in themselves, 'projecting the a priori structure of the knowing subject onto the world, thus mistaking it for a pre-given worldly structure'. This is the all-pervasive 'transcendental illusion', which is very hard to recognise, let alone to compensate for. Bitbol calls on the neo-Kantian philosophers of science to help us with recognising it, but needs to bring in Buddhism to show us how to overcome the illusion. 'Nagārjuna's exclusive mission was to free everyone from the spell of reified conventional truth'. (Bitbol helpfully points out that's a *□ti-satya*, usually translated 'conventional truth', is more literally a surface truth covering over ultimate truth.) Thus, '*to be in nirvāna means seeing the very same things that appear to the deluded consciousness of samsāra, but seeing them as they are — as merely empty, dependent, impermanent, and non-substantial*'.

Efforts towards a compromise between science and religion in the XIX century West failed, leading to a schizophrenic attitude in which a system of beliefs and values were seen as absolutely necessary, but the available system (monotheism) was incoherent in the light of science. Bitbol wishes to initiate the construction of a single higher-order tool, combining science, philosophy, and the 'non-dogmatic soterology' offered by the Mādhyamika. The new tool needs to rely on the 'dynamic potentialities' of doctrines, not their canonical texts,

seeing them as operational rather than dogmatic.

If scientific theories are not representations of the world, but are used for structuring human activities and anticipating their outcomes, with philosophy helping adjust between all the possibilities of action within a value system; then Buddhism opens life out in self-transformation. Science does not reveal a pre-existent underlying absolute reality (realism), yet it is more than a set of useful techniques (instrumentalism), being '*the stabilized byproduct of the dynamic reciprocal relation between reality as a whole and a special fraction of it*' — the subject .

The intrinsic structure of scientific theories is highly significant. They are not arbitrary, but usually remain metaphysically agnostic. In fact, Bitbol convincingly argues that this kind of philosophy of science is far more compatible with modern physics, especially quantum mechanics, than the belief in a mechanistic world and a dualistic epistemology. Some scientists with strong Judeo-Christian background resist relativist and non-dual philosophies because of fear of having no ground to stand on. Mādhyamika dialectically deconstructs substantialist and dualistic views, but it also introduces 'a form of life in which losing ground is not a tragedy (it can even promote enlightenment...) and in which an alternative (say, pragmatic, integrated, and altruistic) strong motivation can be given to science.

Breaking new ground in philosophy-science- religion relationship is Bitbol's compelling response to the problem of indeterminism — the unpredictability of quantum events. Is it that chance is ultimate, and any deterministic laws that we find come from the law of large numbers? Or is it that determinism is ultimate, and apparent randomness comes from the complexity of huge numbers of interacting events, as studied in chaos theory? If we take a dependent arising -type approach, we will see that the causes of any event are not defined in the absolute, but are 'relative to the very circumstances of the production of the phenomena'. Since phenomena arise in dependence upon an enormously complex context, a context which includes the person or instrumentation detecting the phenomena, they are immune to any certain determination.

Relations between things should be seen as being prior to the things that are relating; however, '*neither connection, nor connected* nor connector exist', according to the Madhyamika methodology. Buddhism's radical analysis is needed to cap philosophy of science, since it comes from '*direct stabilised experience of a disabused outlook*' — i.e., non-conceptual Insight into reality — while the insights of Western philosophy, impressive though they are, are the products of the free play of ideas.

Buddhism-science dialogue succeeds so well because its contributors take both Buddhism and science seriously, seeing that both represent ways of understanding human experience, and both present opportunities for enhancing its quality. They are also finding that it offers remarkable new vistas into the methods and models of science itself. But will Buddhism permanently influence scientific practice — where to look in one's research, how to explain and interpret one's findings? Mind- science has already been changed by Buddhism, but the jury is still out on physics. In F. Varela's assessment, thinking particularly of Buddhism impacting science, is that '*the rediscovery of Asian philosophy, particularly of the Buddhist tradition, is a second Renaissance in the cultural history of the West, with the potential to be equally important as the rediscovery of Greek thought in the European Renaissance*.' The dialogue has only just begun; we live in exciting times.[8)]

6. Conclusion

The aim of this essay was to discuss the contemporary relevance of one of the main tenants of Buddhist philosophy — the *ji-ji-muge,* which originated from the Kegon-sutra. Responding to the confusions, misunderstandings, intellectual chaos of the contemporary world of advanced economy and technology, it provides an attractive intellectual tool for the awakening of human mind. On the most conventional level of reality it shows that the relation between human being and the environment is transactional. Just like buying and selling involves *necessarily* a buyer and a seller. The environment creates the organism and the organism, in turn, creates environment. We do not need feel isolated, antagonistic

8) Below some references to the quoted authors in this section;. Joseph Needham*, The Shorter Science and Civilisation in China, Volume I* (Cambridge University Press, 1978), in particular pp. 264, 265, 272; . Robin Cooper, *The Evolving Mind: Buddhism, Biology and Consciousness* (Windhorse Publications, Birmingham, 1996); For a good survey in bioethics see Damien Keown, *Buddhism and Bioethics* (Macmillan, London, 1995); Ian Stevenson, *Twenty Cases Suggestive of Reincarnation* (University Press of Virginia; Jean-Francois Revel and Matthieu Ricard, *The Monk and the Philosopher* (Thorsons, London,1998); Antonio Damasio, *Looking for Spinoza: Joy, Sorrow and the Feeling Brain* (Heinemann, 2003); .F. Varela, Thomson, and Rosch, *The Embodied Mind* (MIT press, 1993). Compare with .Amit Goswami, in *The Self-Aware Universe: How Consciousness Creates the Material World,* argues that the existence of paranormal phenomena is supported by quantum mechanics: *… psychic phenomena, such as distant viewing and out-of-body experiences, are examples of the nonlocal operation of consciousness …. Quantum mechanics undergirds such a theory by providing crucial support for the case of nonlocality of consciousness. (Goswami 1993, 136).*

strangers in the overwhelming world of natural disasters, huge multinational corporations, governments that attempt to introduce political and military hegemony. The old Buddhist axiom of dependent arising reveals itself time and again with full force supported by the most advanced discoveries in astrophysics, bio-chemistry, nuclear physics, psychology. In some time it will be a matter of common sense to many people that they are one with the universe. And when it happens, they shall be in a position to handle our world with more harmony and certainly more sense.

I wish to conclude this essay with a quote from A. Watts' ("*The Book on the Taboo Against Knowing Who You Are*", Vintage Press, 1972) which metaphorically may summarize this essay:

> "*How is it possible that a being with such sensitive jewels as the eyes, such enchanted musical instruments as the ears, and such fabulous arabesque of nerves as the brain can experience itself as anything less than a god? And, when you consider that this incalculably subtle organism is inseparable from the still more marvelous patterns of its environment — from the minutest electrical designs to the whole company of galaxies — how is it conceivable that this incarnation of all eternity can be bored with being*?"