

Meditation, Ethics and Contemplative Science

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Towards a Contemplative Science

In my experience of first being a student of mathematics and physics, then a medical student, later a psychiatrist, and then for the past 25 years researcher and sadhaka in India, I never felt any big discrepancy between science and spirituality. Each was right at its own level. However, being originally from a Catholic milieu, I could see around me that, for quite a few believers, finding a harmonization between the two fields could be a heavy trial and headache, sometimes an exacting task,. I could as well observe that believers had endless questionings about how to reconcile the creation as presented in the Biblical mythology and the hard data of modern sciences. They painfully realized that, the realm of God as defined by them beforehand was shrinking by the day, not only in this field, but also in procreation and reproductive health,. For instance, before, it was the role of God to give children but now, there are all kinds of scientific techniques devised in order not to have them or on the contrary, to activate the process of having them.

Subjectivity is much less taboo than before especially in the field of neurosciences and psychology. It is due to the collaboration of open-minded scientists, meditators and spiritual teachers as well. At first, there has been the publication of the collected research papers by the movement of Transcendental Meditation of the late Mahesh Yogi and from 1985 onwards, we have benefited of the dialogues, most of them which have been published.¹, between the Dalai Lama with scientists, under the aegis of the Mind and Life Institute, In 2005, the Dalai Lama himself has been invited to preside a conference in Washington where thousands of neuroscientists had gathered. It was a landmark in the dialogue between the contemplative traditions and modern science. When I had the discussion with Huzur three years ago, he mentioned to me the importance of this kind of dialogue, and we will develop it in this paper. The notion of contemplative science emerges from all these movements, where the term 'subjectivity' is not taboo anymore. Robert Walsh, a trained physicist and then student of Tibetan Buddhism and able translator of the Dalai Lama, wrote a book in 2001 just on this and subject of removing the taboo about subjectivity among neuroscientists. The Dalai Lama himself underlines that the best field of collaboration between spirituality and science was the domain of psychology. I don't say that because I am a psychiatrist! On the contrary, I chose the domain of psychiatry 30 years ago *because* I was interested in consciousness as well as the practice of meditation and I definitely wanted to build a bridge between psychology and the religions and spiritual teachings.

It is interesting to see that during his dialogues with scientists the Dalai Lama, first and foremost, presents the four Noble Truths as a law of psychology: the central question is going out of suffering, and to succeed in this endeavor, metaphysics are secondary, although certainly not useless. The spiritual chief of Tibetans involved himself more in simple dialogues, he, like Tibetan Yogis in the Western laboratories, helped find the subjects to be studied, and tried to evaluate, with modern measurement, the characteristics of the different states of attention as described and practiced in the Tibetan tradition.

The question of energy and of the subtle body is at the forefront for meditators. In this sense, there are direct links, in the broad sense of the term, with the notion of kundalinî in Yoga, the channels of acupuncture and the reflex therapy. With this kind of meditative introspection, one clearly improves the direct knowledge of the link between body sensations and basic mental activity. All the types of meditations develop this awareness, but it may be expressed more or less clearly and explicitly depending upon the traditions.

Actually, every branch of science has its preferred instruments, the telescope for astronomy, and the microscope for biology. If you invert them and take a microscope to look at the planets, you will go nowhere. In the same vein, the inner world of subjectivity has also its preferred instrument, meditation. First, the instrument should be calibrated and the researchers should learn how to use it, there lies the main difference between Western and traditional Eastern approach. Even great Western psychologists did not have the knowledge, and did not take the time to fine-tune any practice of concentration and meditation. That is why they had great difficulty to see or even to conceive of the subtle realities of the mind. They could not even reason about these parts of reality, because they could not see them, just as, the world of microbiology was not even conceived without the microscope. On the contrary, we could define meditation as the best instrument for the exploration of consciousness, a genuine "cerebroscope".

Here, we come to the question of evidences: for the hard sciences, they lie in biochemistry and brain electricity or imagery. For meditators, they reside in the perception of the current of sensations (skt *nâdis*, tib *tsa*), of the chakras, and the absorption in some archetypal visualizations. However, there have been already some bridges which have been established: I think for instance of the book of Hiroshi Motoyama: *Theories of the Chakras - Bridge to Higher Consciousness*². Brain imaging represents the recent revolution in neurosciences: at last, it is becoming possible to observe the brain and its process of thinking "live".

The relationship between spirituality and science has expanded and become a wide subject. We should mention for instance Ken Wilber, who has realized a substantial work in this sense. He was first inspired by Shri Aurobindo and his ideal to embody spirituality in the world and combine it with new ideas of evolution. With that base, he worked a lot by himself, and now he has written quite a few books, in addition to what is found of his writings on the Internet.

From the Buddhist side also, a lot of publications appeared. The Dalai Lama, although now 75, continues conscientiously to participate in the meetings of the Mind and Life Institutes. The next one will be on November 20-21, 2010 in Delhi. He explains clearly that the aim of these meetings of Buddhism and science is not to convert people to this persuasion, but to serve humankind, so that people could become better persons.

Meditation is a common heritage of humanity. Nobody can claim his copyright on it. Let it be used as widely as possible for the betterment of the mind. It is the need of the hour, and actually it is an eternal need. There are, of course, hurdles and obstacles to be overcome for this work to be done. However, the success will depend on our quality of vision. To quote Etty Hillesun, a young Belgian mystique who died in the Nazi concentration camps, but did not manifest hatred against anyone: "The great obstacle lies always in the representation, not in reality."

In Search of a Universal Ethics

Of every five persons in the world at present, only one or two are religious. If ethics is only based on religious believes, what about all the other 60 or 80%? The figures given for the monotheism for instance are deluding. A majority of people born as monotheists at present have given up the practice, and have a belief so hazy that they cannot be considered as religious. This is valid in Europe and even to some extent in Iran where about half of the population does not go to the mosque in spite, or actually because of the regime. If ethics is only based on religious believes, what about all the 60 or 80% of the world who are not religious? In France, only 22 per cent of people still believe in a personal God, and moreover, as the survey from which I quote this data was conducted seven or eight years ago, this proportion may have decreased by now. The theory and practice of a lay spirituality is an important subject of discussion in France and Europe. In this context it means without any personal God and Church. Even French Christians are deeply and collectively shaken, and their last national convention a few months ago had as a title: "Do we still need God?" Here is a hot debate!

One could see three poles to found a universal ethics:

- Individualism: Is defined as good everything which promotes the development of the individual. This theory is clearly tempting, even alluring for modern Western minds, which value greatly this kind of development.
- Perfectionism: the human being is called to perfection, he strives for it, and this very striving will render him fully ethical: That is the viewpoint of the religious and spiritual traditions.
- Rationalism. Logic only is enough to show us that human beings are equal, and so, human rights must be clearly defined so that they could be applied practically by way of politics and social work.

A famous French thinker, Edgar Morin, who passed away recently, had published some 15 years ago, one of his last books called *Ethics*, where he does not speak at all of Christianity or of any personal God. Actually, modernity is fed up with the sectarian view of ethics in some form of religion. In these religious forms, everything which can help to disseminate the creed is considered as good, and even the so-called Holy War, and everything or everyone which impedes this development is considered bad, even satanic. The French Revolution has been a deep-felt reaction against this kind of half-ethics which boils down to no ethics at all. It is very interesting to note a general evolution especially when speaking of monotheism: its expansion has been based on iconoclasm, i.e., destroying the gods which were globally labeled 'idols' from other religions and countries. Now, modernity takes this iconoclasm to its logical conclusion, i.e. destroying

the ultimate idol which is the concept of unique and almighty God. It somewhat finishes the job. It could be seen as a return of a violent karma on monotheism, a kind of boomerang effect, which is quite logical and understandable.

When we keep in mind this historical context, the approach of Buddhism and Jainism based not on belief, but on ethics directly, sounds more modern, healthy and viable for the future of humanity.

In this sense, let me tell what I heard of a friend of mine, who is a doctor in France but from Iranian origin. A few months ago, she lost her father. He had been an intellectual and liberal, and had assumed the direction of an important educational Institute in Teheran before the Islamic revolution. When his last hour came, while his emotional wife was invoking the Prophet as she had been conditioned to do from childhood, he had the name of Zoroaster and Buddha on his lips. I see in that anecdote a symbol of our time. I wish to speak of another Iranian intellectual often traveling between Teheran and Paris, Daryush Shayegan who is a professor of philosophy. He wrote a book entitled *Light comes from the Occident*. In which, he acknowledges that, the European 18th-century, called the Century of Lights, had been indispensable to our modernity, but he concludes his last chapter by saying that Buddhism was the mainly responsible for founding a universal ethics. This converges with the opinion of Vivekananda, who, even being of course an adept of Hinduism, acknowledged that "Buddhism was the only rational religion".

A contemporary French critic of religions and free thinker, Régis Debray, drew an interesting parallel between religion and technology: religions, according to him, like cultures, represent dividing factors, creating competitions, quarrels and eventually wars. Technologies, on the contrary, are unifying factors, because they can spread quickly the world over and work in the same way all over the planet, whatever the beliefs of people may be. However, we could argue to the contrary that there is a common foundation to the various religions, for instance the process of devotion, which works in about the same way in every tradition. The meditative techniques may also work in the same manner, all what is needed to be recognized is some translation of notions from one path to another.

Compassion, empathy, seem to give a solid basis for ethics, although there may be some critics and *caveat*:

- Compassion may be just sentimental and elicited more by pity or superiority complex than out of real empathy for the other.
- Compassion is connected with religion particularly, in Buddhism. Then, it cannot be universal.
- Compassion is too personal, the need of the hour, and a general principle which could be applied equally for the masses all over the world.

Whatever these critics may say, compassion could be a good basis for large-scale action. Call it empathy, altruism or whatever, but something of this kind must be there if you want the humanity to develop well, and even if you want it to survive. The golden Rule enunciated by the Jewish sage Hillel in the first century b.c.e. is as valid today as before: "Do not do to anyone else what you would not want to be done to you"

Individualism must be also put to question: actually, it is also a kind of new religious belief to imagine that the individual has unlimited rights. It has been fashionable a few years ago to celebrate the anniversary of the Declaration of the Human Rights, which took place at the beginning of the French Revolution. But most people forget that eight

or nine years later, during the Directory, after the dark phase of the Terror where 50.000 people were killed, the French have been sobered in their revolutionary zeal, reflected more deeply and also wrote a Declaration of Human Duties. Very few people have observed the anniversary of this Declaration... Could it be an effect of the banal ego, forever more prompt to assert its rights than to acknowledge its duty?

In this discussion about ethics, the Dalai Lama has an interesting argument, as a Buddhist, on a universal ethics based on God: "What about animals, especially social animals? (Like primates or dolphins) They have a limited form of altruism and it also seems they have a very good sense of responsibility to the common good, but without any religion!" If some animal species could have this beginning of ethics without any God, why not the humanity as a whole? ³

The development of a spiritual psychology in the biblical religions has been overshadowed and thwarted by a bigoted idea of devotion. If someone was trying to understand the mind directly, as did the Buddhist and as is doing modern psychology is doing, he was suspected not to have faith in the almighty action of God, and he was put aside, if not burned alive. This kind of bigoted obscurantism has been sadly effective to impede the development of an objective psychology for more than a millennium in the West.

Even modern psychotherapy has its own weakness, the instrument for introspection is not as finely tuned as it should be, for instance the notion of concentration and spiritual teacher is very hazy to most psychotherapists. True, there is an increase in self-knowledge, they are definitely a lot of publication on psychology, be they popular or academic, but not much increase in self-control is observed. There is a significant joke going in this sense:

Someone comes in a nightclub, goes to the bar and order a beer. The waiter serves it, and the visitor takes up the glass, looks at it, turns it upside down and goes away without adding any word. Rather dismayed, the waiter calls him while he is walking out: "You, crazy, you'd have better to go to a psychiatrist!" One month later, the same visitor turns about again, and redoes exactly the same scenario. The waiter had of course recognized the strange fellow and asked him: "Did you not to go to the shrink, as I had told you?" The other replied: "Yes, actually I did!" "So, you can see there were definitely no results!" "Yes, there are! Before, I had this behavior, but I felt very guilty, now, I still have it, but I don't feel guilty anymore!"

A sound basis for ethics is what goes in the sense of one's own happiness and others' happiness, in parallel if one can say. There are now 8000 researchers working in the world on the psychology of happiness, it makes an important difference with the last generation where almost all the psychologists were focused on pathologies and depression. Matthieu Ricard was a French young scientist, doing his Ph.D. in biology with François Jacob, who has received the Nobel Prize. After this, he became a monk in the Tibetan tradition, and is now a well-known writer on Buddhism and the West, as well as the translator of the Dalai Lama into French. I met him a few months ago in Katmandu, and we discussed different topics. He has written, among others, a famous book, *Plaidoyer pour le bonheur*, a title which could be rendered as *A case for happiness*. It has been translated into many languages. It draws for its sources from Buddhism as well as from Western moral literature, as well as from modern psychology and daily life. In it, he quotes for instance a clear example leading us to think of what happiness really

is. He was with a friend of his in Hong Kong. One day, the latter told him that he wanted to earn one million dollars in 10 years, and then to stop, to do nothing and be happy. After 10 years, he met him again, he had not accumulated one million, but three, and Matthieu asked him whether he was happy. He answered: "No, I feel I have wasted 10 years of my life!" To quote from the same book, Matthieu Ricard reminds us of Shantideva, a Mahayana sage of the 8th century in India who wrote about the ideal of compassion and equanimity. He says for instance in a logical way: "If there is a remedy, there is no reason for discontent, and if there is no remedy, neither there is any reason for discontent..."

Positive emotions as a basis for good health and universal ethics.

The main idea of psychologists who are open to a holistic view of the human being is that positive emotions are good for oneself because it promotes long-term health, and also encourages a sound environment. This directly provides us with a solid basis for universal ethics. Daniel Goleman, a well-known American specialist of emotions, has developed the idea of emotional intelligence. He is also interested in Buddhist meditation and he speaks, playing on the words, of body dharma, the right laws of the body. Bodhidharma was also the Indian monk who introduced Buddhism into China in the fifth century. These newly-discovered laws of the interactions of the mind and the body by different channels are now gathered in a new science, which took shape from the 80s, the psycho-neuro-immuno-endocrinology.

Let us start by giving a series of examples on how emotions directly affect health⁴. A study of William Redford of Duke University on 2000 workers is significant in this sense. They were evaluated for their feelings of hostility and were examined again after 25 years about their general health and rate of death. 20 per cent of the ones with low level of hostility had died, while 30 per cent of the ones with a high level of hostility had died due to different causes, including accidents. This means that a high-level of hostility increased the risk of deaths of 50 % after a quarter of a century. The same author has done the same kind of study with other groups, and sometimes, he has found an increase was much higher, up to 500%.

If the subject has already got a heart attack and is subject to fits of anger, he is two or three times more prone to death after 10 years than the other group of people who had the same basic problem of heart but no fits of anger .

There are lots of evidences that depression disturbs the recovery of serious diseases, like heart attacks, breast cancers, or hip fractures among the elderly. Friedman, of the University of California at Irvine, made a metastudy of hundred studies on emotions and health. His conclusion is that negative emotions double the risk of serious diseases.

Even the simple fact of repressing one's own emotions increases notably the risk of asthma, hypertension, cold, and relapses of breast cancer.

On the immunity side, it has been observed a regular relation between an augmentation of T-cell and the augmentation of the time of practice of meditation. T-cells are important links in the proper working of the immune system.

Pessimists are dismayed in case of failure, while optimists are more flexible, they understand that everything changes, and they know how to wait for better periods of time. Beside, the feeling that we have control over our life helps us to be optimistic, and even to live longer. For instance, in an elderly home, if one again gives some control to a group of inmates, they halve their rate of deaths after one year, in comparison with the control group. In the same sense, social support helps a lot: it increases the number of killer-cells by 30 per cent in women with breast cancer, it means the ability to fight the disease increases and the same social support decreases the rate of deaths by 50 per cent after 10 years.

An interesting study links solitude and stress: a monkey, alone in its cage, is submitted to flash lights and loud banging sounds, and so, it experiences a lot of stress. If they are two, the stress is divided by two, and if they are five monkeys in the cage, there are no signs of stress at all. This experiment should be taken with a grain of salt: there are many cases where people are gathering and partying to escape stress because they don't want to see an impending danger coming onto their society. The result may be that they fail to organize their defense, and finally they are destroyed. Stress may have some utility...

In an important study, the sense of joy has been shown to be the single most important factor for the survival to breast cancer, more even than the low number of metastasis. As for laughter and the watching of comic films, it increases the T-cells and diminishes the cortisol, which is directly linked to stress. We can suppose that a meditator who is able to develop humor in relationship with oneself and who can look to one's own mind as a comic film will benefit from these good effects on his immunity. This kind of studies could point out mechanisms as to how meditation helps to reduce the incidence of cancer, or of relapses after a first treatment.

To conclude this series of studies, we can open the perspective and enlarge the debate: there is a major advantage in separating ethics and the concept of God: it helps people to feel responsible, and that they don't need to be submissive to a powerful entity to live happy and healthy. Many in the modern society will see that as the sign of maturity, and at least the Buddhists or Jains will not be shocked by this approach which they have adopted from the beginning...

The immune system is understood more and more as a second brain, Lymphocytes are like traveling neurons, they are linked not by synapses, but by binding proteins which help to recognize each other. Nerves are effective because they are connected at the end to muscles, in the same way, the immune system is effective because at the end of the chain, it has the group of B-cells which can act directly by liberating antibodies which will smother and suffocate the bacteria and finally destroy them. Besides, the brain develops a feeling of identity in the same way, the immune system has a very accurate individuality, hence the rejection of the transplants.

The time has come to clarify a simple question, in psychotherapy: should one advice a subject to assert his ego, or to reduce it? We should distinguish according to the level of the person. Some people are very inhibited, for instance because of having been crushed by their parents during their childhood. For them, a dose of ego assertion will be good. They have a *tamasic* ego, going to the upper level in the form of the *rajasic* ego will be for them a success. But beyond that, there is the *sattvic* ego which becomes more and more tenuous and transparent, for finally becoming only a very clean veil enveloping the central light of the Self.

To finish this section on emotions, let us tell a story to illustrate how our negative emotions are able to create their own reality: 'A man had a puncture in his car tire in an isolated place at sunset. He realized he had forgotten his screw jack. He saw that the only house at a distance had a lit window, and so he walked towards it. On the way, he was brooding over the situation in a negative manner: "Maybe the man there will be afraid to see me knocking at his door while darkness is falling. Probably he will be egoistic too, and be afraid that I will never give him back his jack. Perhaps he will be angry with me because I disturb him. Finally, he knocked at the door, and as soon as a gentleman opened, our anxious driver shouted to his face without waiting for him to even open his mouth: "You, damned egoistic, keep your jack, I will manage without it, and go to hell! He turned around and went back empty handed in the falling night.

The emotional aspects of right and left hemisphere's

To put it in a nutshell, there is a centre in the frontal left cortex which is connected to positive emotions. The symmetrical centre in the right is connected to anxiety. The specialization of hemispheres is a very old affair: paleontologists have found shells dating from several hundred millions of years. They accurately examined the marks of the claws of crabs which had attacked them, and could conclude that these crabs were 'right-handed' or, one should say, 'right-clawed'...

In meditation, it is traditionally advised to hear the *nâda* through the right ear, or to also concentrate on the right eye, and Râmana Mahârshi used to advise the absorption of attention into the right side of the thorax, as the only practice of Yoga, as a support to the meditation on the Self. Really, there is a direct connection between the right side of the trunk and the left hemisphere, hence the positive effect. As for the eye and the ear, anatomically, the cranial pairs of nerves do not cross the middle plan of the head, except for the optical nerves. However, it seems that the habit of the body image anyhow associates strongly the right side of the face and of the head to the right side of the body in general, and this association is strong enough to be able to 'overwrite' the influence of the cranial innervations.

There is an interesting neonatal reflex: when a newborn baby hears a sound on the side, not only he turns its head on this side, but he has a contraction of the corresponding arm and leg on the same side of the body. Then, by hearing to the sound of silence through the right ear, even an adult, if only he is in deep meditation, will also have probably a beginning of reflex reaction in the shape of an awakening and stimulation of the right side of the body below the head.

To summarize the difference between right and left hemisphere, we could say that the right hemisphere represents the 'quick withdrawal', and the left the 'detailed approach'. This approach is also linked to affective life, to tenderness, and the coming of the mother close to the infant. This closeness brings a real smile with the baby, with the stimulation of the periorbicular muscle below and on the side of the eyes (which produces what is sometimes called 'the crowfeet'). The smile made only with the corner of the lips is a social smile, which babies produce for strangers. The same difference between a social smile and a sincere one also exists among adults.

This opposition between detailed approach and quick withdrawal is a convenient way to order emotional reactions in a unique spectrum. Thus, researcher can classify them in a continuous way. The other classification is not continuous but discrete and is based the usual basic emotions, happiness, sadness, fear, surprise, disgust and anger.

We could mention an interesting experiment about the method of listening to the sound of silence through the right side. The context seems not to be very spiritual, but we will make the link with meditation in the end. The study was about audition and emotions. Psychologists went to meet people in a noisy nightclub, and asked them for cigarettes. When they were on the side of the right hear of the subjects, not only could they hear the demand more easily, but had the tendency to respond to it positively more often. Could we not say that the *nâda* is the call, the demand of the Absolute, and that we better try answering it positively?

As for the Tibetans, they don't have really a term for emotions, they speak of sensations, feelings, sentiments, and afflictions, *klesha-s* in Sanskrit. This includes some emotions like anger, but also ignorance, skepticism, and erroneous conceptions. Actually, they put a lot of cognitive factors into the group of afflictions. This is logical, because people are not bad in themselves, but they, simply out of ignorance, do not know how to deal with their inner world.

One way of meditating on emotions is to use antidotes: it is possible to have a quick succession of love or hatred, but it is not possible to have these two contradictory emotions at the same time. The French philosopher Alain, from the past century, said: "One movement excludes the other. If you extend a friendly hand, this excludes using a punch".

The work of Pr Kabat-Zinn on meditation in hospital.

Pr Kabat-Zinn is Head of a Department of medicine in the University of Massachusetts Medical Centre. It is a large hospital with 400 beds and thousands of outdoor patients. He developed a method of meditation for patients which is now taught in 200 other hospitals in the States. In 1991, he already presented his work to the Dalai Lama in Dharamshala during a meeting of the Mind and Life Institute and this one asked him quite a few questions about how he was doing. In fact, what he taught for people was a classical course of vipassana meditation, but he changed the appellation to replace it by the usual behaviorist vocabulary, with terms like mind body stress reaction and so on. He spread the course on eight weeks, so that it could be done on an outdoor basis, with 2 and a half hour every weekend, and one day of retreat after the first week of eight hours in silence at the level of the group, with the help of guidance of the teachers only. Moreover, the patients were asked to sit 45 minutes every day, and they were warned that it is a big stress to stay such a long time without doing anything... Kabat-Zinn adds with a pinch of humor that it is almost anti-American to make this exacting demand on normal citizens! What is remarkable is that 86% of people who started the course went to the end of it. This is an excellent result in comparison with usual medical treatment, where the dropout in the follow up of the treatment is more important, and at the end often only 25 per cent of people complete the required cure. This is still more interesting, because the people were under-average Americans, it means they had serious diseases, which are frequently connected to disturbing emotions and gross errors in lifestyle. What is also

interesting is that after four years, 45% of people continued to seat at least 15 minutes three times a week and globally follow the course prescriptions about the need of awareness in daily life. This was without any outer reinforcement or reminder.

About the medical results, a 25% reduction of medical symptoms, and a 35% decrease of psychological complaints about anxiety, depression, etc have been observed etc. More important, even in this short period of time of the course, there has been a real personality change: this has been appreciated through different tests, for instance, a 7% increase in the capacity to cope with stress have been noted. According to the specialists of personality, a global augmentation of 7% on a full group is really significant.

As for the methods, Kabat-Zinn remained quite classical. He had himself followed a teaching of Vipassana in Myanmar (Burma). He prescribes also hatha-yoga for the body, and lying down for the meditative practice. The American professor apologized when he explained this to the Dalai Lama, but said that if he asked his American patients to go for lotus pose right away, he would not have any client for the next session... They do a lot of breath observation, a little bit of choiceless awareness meditation at the end of the session, fully knowing that it is the most difficult meditation because it is the most simple. In between, they mostly take the support of body scanning. Generally speaking, most people have stress but do not recognize it. In this sense, the body scanning is, first and foremost, a way to clearly identify that yes, there is a problem of stress.

In this sense, there is an interesting test in experimental psychology: people who are known to be anxious were asked to look at a complex image, with one part of it showing disturbing elements. At the same time, the movements of eyes were recorded, especially by monitoring the direction of the acute vision. It has been observed that they not even look at the disturbing area of the image, and when they are asked to comment the picture, it seems that they do not see this part, so they don't speak about it at all. Actually, what probably happened is that they did actually see the disturbing part with their peripheral vision, it elicited some more anxiety in them which they were not able to cope with, and so they just shut it out. This mode of functioning is probably equally valid for the inner view of body and sensations, the tendency being to shut out disturbing areas of the body. Hence the usefulness of full body scanning, which remedies this kind of suppression, and also the importance to start by observing the breath, in order to calm the mind first, reduce anxiety and then be able to see more clearly what is going on inside the body and mind. It is Usual, especially in modern life, for people to have the habit of being always busy with something. The motto is "Keep on going". Going through the different parts of the body allows a gentle transition between outer busy-ness or activism on one hand, and inner quiescence on the other.

Body scanning should be done with a main instruction: "do not let the sensations spread in other parts of the body, remain focused on one part only where you accept any arising sensations". Usually, sensations in a part of the body have the tendency to spread, for instance if we have a beginning of anger, we will clench the fist, then increase the tension in the jaws, and then there will be a big tension in the belly and in the sole of the feet, and at last a small series of locations will be tense and the full emotion of anger will be there, well rooted in different part of the body and it will be very difficult to get rid of. So, it is more conscious and effective to nip it in the bud, if one can say, to limit it at the level of local sensation. Indeed, the chain of sensations evolves into an emotion and finally binds, whereas, conversely, breaking the chain right away liberates. Disturbing

emotions are like a cobra poised to strike. If you cut the snake into slices, it won't be able to strike nor bite. Another image could be that of epilepsy. The fits and convulsions are due to an excess of synchronization either in parts of a hemisphere, or in all of it, or in both. In the later case, we have general epilepsy, with at least loss of consciousness and usually loss of motor capacity too, i.e., fall and convulsions. We could consider emotions as a kind of specialized epilepsy, which over-synchronizes a series of parts of the body and obscures the clarity of mind. For instance, a fit of anger is really like an absence and a coming out of the normal and healthy mind for some time. In this sense, people may have difficulty to remember what they have said or done. On the contrary, by 'de-synchronising' the sensations coming from each part of the body, we will effectively prevent these 'para-epileptic attacks', it means the emotional fits. Of course, most of the time during our normal days, we are not agitated by big emotions, but still, we are somehow chronically poisoned by minor forms of them, for instance small irritations by near and supposedly dear who repeat the same mistakes always and have not changed an iota for the past several years, etc

What is also remarkable in these meditation practices for serious patients is that even people, who could not gain a sizeable reduction of pain while pursuing their sessions for three years, explained that they were better able to cope with the unchanging pain. In general, when people are asked what did they find in this meditation training, they insist on increased awareness, and their realization of the fundamental truth: "I am not my thoughts, and hence not my suffering."

Actually, 'medicine' and 'meditation' come from the same Latin root, which means not only to cure and to care, but also to measure. Meditation indeed is that: moderation, measure in the appreciation of oneself and of the situations, re-establishing a just proportion between oneself and the others, and above all between the different parts of oneself, like sensations, feelings, reason, instincts, ideals, etc

Here is a good piece of advice about relaxation and meditation too: "Be so relaxed that even if you see tensions that you cannot relax for the time being, you accept it in a relaxed way..." Even people with medical problems, like cancer, said they could benefit from the meditation training. They were instructed in a very simple way: "Care for what is right with you, the doctor will care for what is wrong" The trust of the method was the not to erase the problem completely, but to learn how to accept it and globally accept things as they are. Finally, this new approach for modern medicine tends to underline a shift between curing and healing, between just taking a magic pill or caring for the whole of the body-mind-soul complex.

For Indian doctors and therapists, this model of Kabatt-Zinn should be a case for deep thinking, a challenge of sort. These practices of meditation came from the Buddha, hence from the Indian tradition. They are now taught in 200 American hospitals, but what about Indian health centers? Certainly, there are some attempts here and there, but there should be much more of them, and more systematic ones. If not, it will look like these Indiana herbs which are used since millennia in ayurvedic medicine, but which are suddenly patented in America by a new dynamic company... Sleepy Indians will be left behind!

All these observations and research on the link between positive emotions and good health, hence longer life, help to better identify the link between medicine and meditation, in fact, it somehow comes back to Taoism, which was not as much

metaphysical as Indian thought, and not obsessed by martyrdom for the glory of the one God as in the Bible and in the religions which derived from it. In Taoism, the aim is a good, happy and long spiritual life. They have developed holistic methods for that, including alchemy which was connected with medicine at that time, and also techniques of meditation. Undoubtedly, there is something to learn from this perspective.

Seeing the experimental proofs that positive emotions provide good health and long life is good news for the three quarters of humanity who are non-religious people looking for a solid basis to found their ethics. To go one step further and be a little provocative, we could add that it is good news also for people who are supposed to believe in a god or another, but who are not quite sure that he exists. In that case, they will at least have the solace that there is the proof that the endeavor they made to develop positive emotions will reap positive effects, even if they were ultimately mistaken about their metaphysical conceptions...

Many people, although apparently integrated in a social network, feel lonely inside and suffer from it. A western psychiatrist, Howard Cutler, wrote three books with the Dalai Lama, starting by *The Art of Happiness*⁵. He asked him once whether sometimes he felt lonely. He was almost sure to that he would answer 'yes', because he knew him for the past 30 years, and he had observed that he was very sincere about his own feelings. Surprisingly, the Dalai Lama replied: "Never!" He then explained that the feeling of solitude comes from the lack of active compassion. Although he is very busy as head of State in exile and spiritual leader, he tries to connect with people, and even when the first trial is a failure, is still tries again by other ways and at other levels. Often people feel that it is the duty of others to take the first step, and not the reverse. If the other is also thinking in the same line, life reduces itself to a juxtaposition of small spheres of solitudes, and becomes actually rather grey and dull. To continue with the Dalai Lama, he says very clearly, that with his experience of life, he is now just 75, he realized that what was important in religious and spiritual life was not what people believe, but rather whether they were good persons doing good or not.

The notion of awareness and the limitations of neurosciences

An Asian Buddhist monk asked to the scientist who was recording his brain waves: "Do you have a machine to measure awareness?" The researchers realized he did not, he was just recording some kind of global brain activity. Certainly, with the brain imagery, one can be more precise and know quite a few details, but what about this synthesis which is awareness? Measuring awareness is still a distant dream. So how to start? If there is no way of measuring it, how is it possible to build a science about it?

Actually, if you look inside the field of sciences itself, you observe a discrepancy between hard and soft sciences. What is considered as valid evidence in psychology and sociology will be just empty talk for physics and chemistry. Nonetheless, it would be hard to deny to soft sciences the very name of science...

If you delve deeply into all these questions, you will realize that Western psychology itself needs a good psychotherapy, to cure megalomania of the sorts: that is to believe that it has discovered the depth psychology, and the unconscious mechanisms, while the

meditative techniques in the East are dealing also with that for two or three millenniums. Moreover, Western psychology, except in its parts about neurology and experiments in laboratories, is not really a science. Psychotherapy remains an art, and so much the better.

The most knotty question that arises in the dialogue between spirituality and neurosciences is the question of reductionism. The general assumption of neurosciences is that consciousness is a secretion of the brain. Of course, some great researchers like Sir John Eccles, a Nobel Prize winner, are clearly against this. But if the consciousness is independent of the brain, how to objectify it, how to measure it? The Dalai Lama is of the opinion that this could be possible one day or other.

Another question is why modern science has been working mainly on cells and chemistry, and the yogis on the notion of centers and channels of energy? Here, I think that the answer is rather simple, out of mutual ignorance. Now that a dialogue with more mutual knowledge is possible, it is important to work together to have a fuller view of the picture. In this sense, there is a branch of this field which is called kundalinî research. One 450 page book has been released on this subject, edited by John White.⁶ It is quite complete on this field, balancing the traditional and modern approaches. We also spoke before of the book on chakra and channels by Hashimoto.

In fact, there should be no taboo in the choice of subjects of scientific investigation. The well-known biologist Rupert Sheldrake worked on the morphogenetic fields, studying the fact that some learning among animals seems to be conveyed directly from one place to another without direct contact. He now also studies on parapsychology. He has requested the British government to devote 1 or 2 % of the global envelop for research to 'popular science', dealing with subjects chosen by people themselves, and not by mandarins in the Ministry. Actually, he recently got official subsidies for parapsychological research for the first time.

One big taboo so far has been subjectivity in itself, it was an anathema for instance by behavioral psychologist, this dogmatic attitude is fortunately receding. Certainly, there are subjects which need to be handled with precaution. For instance, in the field of kundalini awakening, there are a lot of false experiences which are disturbed forms of sexual awakening, more related to hysteria or to borderline conditions. In the field of drugs, especially with the auto experimentation, we are obviously on a slippery floor. Still, there were psychiatrists, like the French Moreau de Tours in the 19th century, who experienced with the hashish for instance to be able to describe very correctly its effects, and his observations are still valid. There is a French doctor too, Jacques Mabit, who is working on the effect of the Amerindian herb ayahuasca. He has a center in Peru which is producing good results, it seems, for difficult problems like detoxification of heroin or alcohol for instance. .

Of course, we should take the notion of initiatic secret in traditions seriously, some knowledge can be easily misused, and caution is necessary. Moreover, the guru will give his instructions according to the level of a particular disciple, they are usually not universal. On the other side, for instance, the Tibetans techniques of visualization were considered to be the exclusive secret of Himalayan yogis in their caves at the beginning of the 20th century, but they have found practical applications with techniques like Caycedo's sophrology in the French and Latin world, and the mental imagery against cancer with Simonton in the States. We have seen the same process with Vipassana and

the considerable work of Professor Kabat-Zinn. Of course, there are negative aspects in this evolution, for instance commercial tantrism, both in modern India and in the West.

Another obstacle to the scientific study of spiritual phenomena can come from the meditators themselves when they are asked to collaborate. Matthieu Ricard told me for instance that Chinese Buddhist monks had difficulty to accept record of their brain in meditation, because they were afraid like schoolchildren that the conclusion of the test could be that, after 20 or 30 years of endeavors, their meditation was bad and fruitless... But it is not like this, these studies are made out of curiosity, it is the natural tendency of the human mind to go and see what is going on in a particular place, be it the brain.

At the beginning of my stay in India, I visited a few ashrams which had set up a laboratory for research on meditation. I had the global impression that the biggest shortcoming of their undertaking was a lack of review of literature. They just did with their limited equipment what had been done already hundred times, especially in the West, 20 or 30 years ago. As we say in French, they 'dashed into a door already opened'. The basic principle of scientific research is to first do a good review of literature, to identify exactly the areas which need clarification or innovation, and then only start the research. If not, the experiments will be only a kind of advertising aimed at showing to the naive believer that the technique of a given ashram has some physiological good effects. But in fact, all the methods of relaxation and concentration have some good effects.

Since we speak of awareness, we should ponder shortly on what is the sense of ego. From the neurological point of view, it seems there is a centre of the ego near the *corpus callosum*, it means the junction between the two hemispheres. This seems logical, since consciousness is born and nourished out of comparison, by pondering and balancing one side with the other. This is the role of the *corpus callosum* to enable this kind of work, to provide the neuronal wiring for this.

It is important also to reconcile in simple terms Vedanta and Buddhism regarding the question of ego: when Buddhism says there is no atman, it corresponds to the ego, the individual atman of Vedanta. As for the universal atman, a school of Buddhism still deny it fully, while others accept the existence of a fundamental consciousness, or a 'storehouse of knowledge', *âlâya vijñâna*, like in the Yogâchâra school. Certainly, Buddhism likes to content itself with the idea of *vijñâna*, a temporary consciousness which works as a reaction to *vedâna*, i.e. sensations and feelings. Understanding the functioning of this temporary consciousness, as we would say in computer sciences the RAM, the active working memory is enough to get liberation. According to them, there is no need of an eternal consciousness, which is not only not provable, but also not needed.

Now that we are going to reach the last part of these reflections, it is important to reflect for a while on the question of concordism. This is a term of science of religions which describes the deep-seated tendency among believers, to make concordances, agreement, between the recent scientific discoveries and some parts, even only verses or words, of the sacred Scripture. This tendency should be taken with a grain of salt: for too often, there is a confusion of level, between the golden age of the religion, which is the way to express in mythological form that it comes from pure consciousness and from the Self, and the real history with an evolution from ignorance to more knowledge on the

scientific level. One has to accept this paradox: a child of 10 or 12 at present knows more exactly about the physical world than any prophet or *rishi* of yore.

I lived in a Muslim country, Algeria, for 15 months, I was teaching and practicing psychiatry there. I had some contacts and exchanges of views with a Sufi brotherhood. Like the whole Muslim world, they had been very impressed by a book on Koran and sciences which had been written by a French explorer, the Commandant Cousteau was taking a single verse or sometimes even an isolated word of the Koran, and trying to show it was vaguely predicting some ulterior scientific discovery. This kind of simplistic interpretation is just not convincing, but it has been a big success in the Muslim world, because believers are deeply anxious about the growing invasion and power of modernity in front of the tenets of their faith. This book was visibly a kind of attempt of reassurance, but it could convince only the ones who were ready to be so.

Actually, when an ideology wants to be totalitarian, it has to interfere with sciences and the result of their researches. It has been the case for Stalin for instance, who was dictating to biologists what conclusions they had to find to be in line with the party, for instance, that acquired factors were genetically transmissible while actually they were not.

It is interesting to see that among modern Muslim fundamentalists and terrorists, we find people who have a high level of study, like Ph.D. in sciences. But when you look from near their exact field of study, you see that it is regularly some kind of technology, in material sciences, and almost never in psychology or psychiatry. I remember when I worked in Algeria as a psychiatrist, no one of my colleagues, be they psychiatrists or psychologists were even remotely tempted by fundamentalism. Actually, they saw too clearly the manipulation of mind it involves, and the mix of paranoia and depression it expresses.

Let us nuance our critique of 'concordism'. One can say it is a naïve attempt as far as hard sciences are concerned, but it is relevant in the field of psychology, particularly if you are interested in archetypes. Those images, who have given an inspiration for millions have definitely something in them, are able to stir a deep chord in the human heart. They can be taken over by our modern psychology, by keeping in mind also that if we want them to be really effective and active, they need to be concentrated upon for a long time and with full energy, as has been done traditionally.

After speaking of concordism, we can say a word about creationism. The main problem is with the religions of the book, like Christians and Muslims who are dogmatic about the view of creation. Certainly, the Catholic Church has retreated a few steps for the past few decades, but the basic problem remains almost the same. If the personal God has not be able to intervene in the creation, not even to fabricate one speck of dust, how on earth will he be able to change the heart of every human being, and to judge them at the end of the time? In the conception of Vedanta and Buddhism, one can say that the world has always existed, although it has evolved and undergone cycles. In this context, people will be more at ease with the scientific cosmology. And may be the silence of Buddha about this question, expressing that he doesn't know, is more honest, because at his time, one could not know anything scientific about the origins and beginning phases of the universe. Now, we have much more concrete facts and knowledge to think about this matter in a proper way.

Another illusion of pseudoscience is to apply a kind of Darwinism to the evolution of religion. According to this view, the largest number of followers equates to a better religion. It is a naive application to religions of the law of Darwinian competition for life and supremacy. There is already again the spiritual argument of Swâmî Râmatîrtha: he explains, not without humor, that if the number of devotees should be the sign of the value of a religion, certainly, the religion of Satan will be the best of all: actually, he is the one who has the greater number of devotees, addicted as they are to the ideas of violence, lust, avidity, anger, etc. Moreover, a simple reflection will show that epidemics may spread to a good part of humanity without being for the good of it.

The research about parapsychology is very important for the future: it will help to integrate into the field of science all these phenomena which appears in different traditions, but have been may be only related to different gods or even to a unique one. There are quite a few people working on this subject, we may mention, for instance, Marilyn Schlitz and the IONS, Institute of Noetic Sciences in California. They have definitely proved that thought has a power. It was not so much a question of quantity of people having the same thought at the same time than the intensity of the feeling accompanying it. Somehow, it is like a rocket propelling a satellite into orbit. Marilyn Schlitz honestly says that with her team, they have found nothing allowing to connect this power of thought to a personal superior entity, whatever his name.

There is a dynamic society which organizes conferences on psychology and spirituality in India, the Yoga Psychological Association of India, YPAI. I participated in their conference in Hardwar, it was in 2007 if I remember well.⁷

A last reflection on awareness and sciences: until not so long ago, the departments of philosophy and psychology in the Indian universities were reunited. It was the case too a longer time ago in the West. Now this tendency has come back in an interesting way in Germany. A young philosopher, Richard-David Precht, studied in depth the neurosciences and the psychology and made an understandable synthesis of all this in a book who has become a best seller in Germany and is now translated in several languages. He has given a humoristic name to his work *Who am I, and if I am, how much?* He understood that , in front of the mass of disorganized information, often contradictory, arriving from e very corner he was lost as a traditional philosopher, as well as the general public was, . So, he worked hard to organize all this new material. Modern philosophy should not be only a repetition of the history of philosophy, but be able to explore and somewhat digest new fields of knowledge.

Returning to contemplative science.

There are differences between musicians and musicologists: the first ones practice an art, the second ones speak about it, analyze it, etc. However, it is difficult to imagine a competent musicologist who would not have any practice of music, neither a taste for it. He would be simply 'out of sync' with his subject. This analogy holds good for psychology and neurosciences on one side, and meditation and the subjective practice of awareness on the other. Even with a simple knowledge of meditation, therapists can do a lot of good, as Pr Kabat-Zinn has demonstrated for the past 30 years. There are quite a few psychotherapists who have understood the importance of a daily practice of

meditation for themselves. Let us wish that this tendency will grow both in quantity and in quality.

To conclude, it will be interesting to let speak Matthieu Ricard who was a top scientist and is now monk in Tibetan Buddhism, about what objective reality is, and what could be a foundation for the spiritual search.

“What do you mean by: ‘objective knowledge’? The nature of particles can’t be known independently of our systems of measurement. In the same way, a universe independent of every human concept is couldn’t ever be known by the human mind. What is it that’s attached to the reality of phenomena? The mind! And here, in the spiritual practice, what are we working on ? On mind! Should we succeed in unblocking the wrong perception of the solidity of the world, a way of perceiving which leads to endless suffering, then we will reach objective knowledge. It will not be the one of the physics of the natural world, but the one of the mechanisms of suffering and of the experimental verification of the results of that science of the mind.

Why should we consider that experimental verification could apply only for physical phenomena? From that point of view, only the quantitative and physical sciences would deserve the name of exact sciences. To be exact, any science must start with a few hypotheses, proceed with rigor in the field of experiments, to eventually confirm or invalidate those hypotheses by the results of the experiments. There is no reason at all why the criteria should be confined to the physical, so called objective field. Besides, I do not see why we should dissociate the science of the mind from the improvement of the individual. Surely the conquest of serenity is one of the experimental proof of contemplative science, just as the falling of bodies is the experimental verification of the law of gravity.

Nothing, other than the mind itself, will allow us to recognize the ultimate nature of the mind. If introspection has failed as a scientific method in the context of Western psychology, it is because those who used it had not developed the suitable tools to conduct their experiments. They did not have the slightest training in, neither the slightest knowledge of, the field of contemplation and knew nothing of the techniques allowing to calm the mind in order to observe its underlying nature. It is just as someone who would use an unstable voltmeter and concluding that it is impossible to study the tension of an electric current... Skepticism is understandable, but not the lack of interest, of wish to verify the validity of a different approach. In fact, the same problem also exists in the other direction. I know Tibetans who refuse to believe that men have been on the moon!”
8

This field of contemplative science is a lesson in humility. Nobody knows the full picture, but if we accept to collaborate, many interesting discoveries will come out. Moreover, this work of unification is positive; the Bhagavâd-Gita would say *sattvic*, in a well-known verse (18, 20):

*Sarvabhuteshû yenai’kam bhâvam avyayam îkshate
Avibhaktam vibhakteshu tah jñânânam viddhi sâttvikam*

“This knowledge by which the imperishable Being is seen in all existences, undivided in the divided, knows it as *sattvic*”.

Vigyananand (Dr Jacques Vigne)
Hermitage of Dhaulchina, Almora, July 2010.

¹ And killing emotions: the conversations with the Dalai Lama on the mindfulness, emotions and health is, Boston, Shambala publications, 1997 also sleeping, dreaming and rallying: an exploration of consciousness with the Dalai Lama, Wisdom publications, 1997.

² Hiroshi Motoyama,: *Theories of the Chakras - Bridge to Higher Consciousness* New Age Books, Delhi, 2001 and first by The Theosophical Publishing House, USA, 1981

³ Goleman, *Healing Emotions, op.cit.* p.27

⁴ Goleman *op.cit.* p 35-43

⁵ The Dalai Lama and Dr Howard Cutler *The Art of Happiness* and *The Art of Happiness at work* , two books which have got recently a sequel.

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Kundalini - Evolution and Enlightenment edited by John White, HarperCollins India, 1997.

⁷ with Ganesh Shankar as coordinator in Sagar University, gshankar_sgr@sancharnet.in

⁸ Ricard Matthieu and Revel Jean-François *The monk and the philosopher* translated from French see also www.matthieuricard.org