

1990 Conference: Buddhism and the Modern World

A New Science

The following talk was presented on July 14, during the "Buddhism and Science" weekend of the conference, by Dr .George Weissmann, a theoretical physicist and former researcher at the Federal Polytechnical University in Zurich.

We are living in a world today which, in someways, is dominated by science, by a science which has come to be regarded as a pseudo-religion in the sense that it claims to have access, at least in principle, to ultimate truth. And although most people will admit that science is not at that point yet, that it still has a few details to work out, nonetheless, many people feel that science and humanity are well on their way to understanding the ultimate laws of nature and the ultimate nature of reality.

This view of science and its importance is held not only by scientists, but it appears to be held by large portions of society in general. As an example, medical science in the West is regarded in a quasi-religious sense, so that if people choose to treat their children by other than Western medical science, they can be put in jail.

Somewhat less oppressive in a legal sense, but quite oppressive in a subtle sense, is the domination of scientific ideology in politics and in the legal system, where the ultimate arbiter of truth is the expert who is brought in from the outside.

Yet at that moment when this view of science and technology seems to be spreading across the world and dominating it ever more, from within science itself, a new view is arising which challenges the right of science to its claim in representing the absolute view of truth. This new direction has several names: "the new science," "new physics," "the new paradigm," or "post-modern science." Many words describe it, but it is far too early to call it a unified, well-developed view. It's more like something arising with different aspects, depending on your point of view and approach. It's similar to the parable of the blind men and the elephant. Some blind men touch its legs and think the elephant is a tree, while others touch the ear and think it's a banana leaf, or touch the trunk and think it's a fire-hose. From each angle you see a different feature. But in general, people are beginning to speak of a new paradigm.

From this perspective it is clear that what we call science in the last 200 years is just a particular approach to science. Science itself is something broader. It is an attempt at never-ending exploration, which keeps an open mind and challenges its own presuppositions again and again, and for whom experience is the ultimate arbiter.'

By contrast, what we traditionally call science is only a particular manifestation of this exploration. Science is, moreover, weighted down by a lot of baggage of presuppositions which, however, have not been recognized as presuppositions, but have been taken to be simply true and often have gone unquestioned.

Some of these are: (1) that the world is essentially objective; (2) that the world is material; (3) that phenomena are related only in causal ways; (4) that the causality is carried by matter; (5) that if you look at hierarchies of systems, the lowest, the most fundamental one can explain the most complex and sophisticated ones, that is, living systems. This idea, called "reductionism," suggests that living systems can be understood in terms of atoms, and atoms in terms of elementary particles, and the deepest and most fundamental understanding is at the smallest level; (6) that things that we can measure objectively are the only phenomena worth investigating. This is the theory called "positivism." I could go on.

These are known as presuppositions, and they are taken to be fundamental and not worth challenging. If you accept them as fundamental, it will lead to a very specific optic (viewpoint), and if it projects itself as truth, and the only truth worth knowing, you have in the making a new religion--a very poor religion, without spirit, without morality and without any orientation.

If this system of thought, however, were taken as just one way of looking at the world, then science has shown its power to yield many interesting insights and powerful technologies. It's not science itself that is harmful, but its hubris and its self-aggrandizement into a total approach to reality that is dangerous.

Because of the reductionist nature of science, the level of electrons, protons and so forth is regarded as the most fundamental level of science, and the area that deals with this is called "particle physics." It has been regarded as the "high-priesthood" of science, and the other areas of science have traditionally looked toward particle physics as the most promising approach to yield ultimate truth. It is therefore deliciously paradoxical that from this very field has arisen the most radical challenges to the whole view; as if, having gone to the furthest and the deepest, particle-physicists have begun to realize that the whole approach is essentially flawed.

The twentieth century theory of elementary process called "quantum theory" has shown a world which is not essentially material as we think of it, but a world of process. Challenges to the presumptions that I mentioned have come largely from this theory. It has shown a deep inter-connectedness between all phenomena, which is quite different from the "separate-system" approach of the older science. It has shown a world in which causality is not enough, but in which what others have called "synchronicity" or "meaningful coincidences" play an important role. It shows a world which is alive in the sense that each process shows a consciousness or a "knowing quality" to it, rather than consciousness being an isolated phenomenon in special kinds of systems, such as human beings. Consciousness may be a basic phenomenon in the universe.

It shows us that matter is not a thing but a tendency or, if you will, "karma," and that gives us a whole new perspective on the freedom of every moment and causation. And it shows us that the separation between subject and object, which was essential to the old science, is illusory, and that subject and object are fundamentally connected. This has sometimes been called a participatory and not an observer universe. There is not enough time to go into these interesting and radical new insights, which are radically new only within science. I think each of you here is familiar with many of these theories from within your own disciplines. This may explain why some people have said that the most modern directions of science and traditional spiritual disciplines are showing a common view of the universe. While this is true, it has sometimes been distorted to say that modern science is proving this or that spiritual view. This cannot be said at all.

Rather, what is emerging as a real possibility is a new paradigm or "over-all view of the universe" that is wide enough to encompass within its folds both the new kind of science which is emerging and the spiritual views of the world. If this were to come about, and I think it will, it would be very important because it would allow us to operate without "changing hats." When we emerge from meditation and go into the laboratory, we won't have to change hats, and there will be no discontinuity between the two worlds. There will be a common framework in which we can operate throughout our lives.

I would hope to learn how the monks and nuns at the City of Ten Thousand Buddhas relate to the 'old science' that you learned in school, and how you react to the old science's claims that what your lives are about is non-essential and obsolete. It matters to challenge this point of view because, given the power of science, which it demonstrates with all its technologies, that wrong view carries a lot of weight, and it gains the acceptance of science as a whole. How do you spiritual people bring that view and the truth "under one hat," so to speak?

I heard Dharma Master Heng Chau, for instance, say that Buddhism can be considered a science in its empirical method of exploring the principles of nature that the Buddha spoke, rather than mere dogmatic acceptance by faith alone. The way he described this approach to Buddhism was an inner discovery with all the open-mindedness that is characteristic of science at its best. From the side of science in recent years, there has been a similar approach from the other side, let's call it "external discovery." Certain physicists discovered that the old paradigm of reality outside us had been invalidated by, among other things, quantum theory. They discovered that we ourselves cannot only observe reality, but in a way we are reality. So, by looking in our own mind, in our own being, we can observe the same principles in operation that scientists can observe outside of us. In looking at quantum theory in particular, in one sense it is easier to see its principles in operation in our own mind than it is in external Nature. To see these principles at work in external Nature, we have built costly and complicated machines, whereas the same principles can be observed most clearly in our own minds.

Doug Powers, of Dharma Realm Buddhist University, and I have actually recently formed a group of explorers who try to combine inner contemplation and practice with

external observation and rational discourse in a synergistic, complementary way to pursue our exploration.

I can see this new science and spiritual practice approaching one another, but they are not quite the same thing. Even so, it is becoming more and more clear that they are not incompatible and there are many features in common.

I'd like to share my personal experience of fifteen years ago when I went to study quantum theory more deeply. I was like many other physicists in the same situation: deeply perplexed at the fact that the old science just stopped. The old picture had been destroyed, but no new picture had been put in its place, and you could get caught in paradoxes where nothing fit. So most people just retreated from the whole question. But if you want to stay with the question, it's as if the old paradigm is a prison with no escape, it's closed in itself, and you know it's not right. You know it's a prison, and you don't know how to get out.

Only undertaking a kind of spiritual practice, a direct experiential practice, can one get a new vista. I don't want to say that I have a new vista, but I have caught a glimpse and so have other people. And all the other people, be they physicists or biologists, who seem to exhibit some of the same intuitive understanding of this new paradigm, all of them that I know, have engaged in some form of practice. I think that what we need to do as scientists who are looking for more evolved formulation of the new paradigm is to make steps in an actual disciplined form of practice and engage in working dialogues with monks and nuns who have a great deal more practice in this discipline.

What we would like to do is build up a working dialogue and actually look at the questions. We want to practice together to get more insight into these questions. In this way, there can be a very exciting and fruitful overlap between spiritual practices and science.

Summary of Open Discussion

Bhikkhu Yanesaro—Theravada monk: The question is irrelevant to my life. What happens to a new or old science is not important to my practice. By studying my own phenomena—my body and mind—I will reach my own conclusions. I will not be able to learn truths from another person. Only by a self-journey into the nature of things will I discover what is real and unreal. Many people want scientists to tell us what is right and wrong. A true cultivator finds out on his own.

Heng Chau—Bhikshu and teacher: Science brought me to my life as a monk. The reasons why science did not sustain my interest is a story I can document through my changes of mind in reaction to events.

As a high-school student at the time of Sputnik, I was suddenly introduced to an education that emphasized hard sciences, because as a nation we had to beat the Russians. The whole program was identified with fighting and competition. I rejected delving

deeper into science for two reasons: (1) the fighting energy was clearly harmful to oneself and others and was motivated by other interests, not selfless or pure, but political and economic. I further rejected having to pith frogs and dissect fetal pigs. My moral sense revolted at having to pith lesser species. So I turned from science. It had a positive side because it made me realize that all people have a spiritual nature, and our highest goal as people is to unite with that nature. I am now a monk because I felt that my time to realize the goal of that search was limited. I chose not to invest that time in science.

to be continued...