

## **SERVING HUMANITY**

### **Panel Discussion**

**Monastic graduates on the panel:**

**Kachen Lobsang Thugje**

**Lopon Shelnang**

**Khenpo Jamyang Gonpo**

**Geshe Phuntsok Namdol**

**Geshe Passang Gyatso**

**Chris Impey** (Moderator): This is the last session of a very exhilarating and intriguing three days. I think it is going to be a challenge to recapitulate three days in an hour, but we will try. I ask that everyone around me be brief and conscious of time. We are a large group and we want to hear from everyone.

We're going to have a couple of questions that come from the monastic graduates summarizing a general concern, or issue, that will

be open for any of the panelists to respond to. Then I'm going to ask the presenters to give their own version of what the next steps might be.

Let me start with the two questions summarizing the input of the monastic graduates. First, what is the most important goal that has so far been achieved in this dialogue between science and Buddhism? Second, what do you expect to achieve in the future?

**Paul Doherty:** The important goal is sharing both ways. Buddhism has well over 2,000 years of thinking about the meaning of words, and probing the mind, and the young upstart science has only 400 years of probing the physical world. As we noted in the conference, science has one of its limits in quantum mechanics. As we probe the very small, we run into particles that behave as waves and waves that behave as particles. When we begin to ask questions of those particles and waves, to do experiments with them, it seems like the questions we ask are about the consciousness of the observer. The doing of the experiment interacts with the experiment, and we are on the verge of trying to understand how that can be. I believe the long tradition of Buddhism may give us some guidance on how to think about doing those experiments.

**Chris Impey** (Moderator): Many thanks. That's a good thought and a good model for an answer.

**Bruce Greyson:** As a Western scientist, I am a methodologist, not a theoretician. What excites me most about this dialogue is learning new techniques from the Buddhist scholars—the long tradition of technology in meditation and introspection and the vocabulary for these internal states that we in the West have barely begun to explore. I'm excited about the possibilities of taking some of these techniques and applying them in our Western settings.

On a larger scale, I think one of the biggest advantages, or benefits, from this collaboration is a change in attitudes on both sides. As a

Western scientist, I know that a lot of Westerners feel that science and religion in general are enemies and cannot ever coexist peacefully. And from what His Holiness said on the first day, many of his advisors thought that it would be dangerous to introduce science into Buddhist training. I think what we are seeing here is that there is a lot we have in common and there is a lot more we can do to help each other. We don't have to be on opposite sides; instead we can collaborate in helping enhance our scope of knowledge and our ability to help humankind.

**Geshe Lobsang Tenzin Negi:** With regards to where we go from here, the next phase is to implement science education and dialogue into the monastic curriculum itself. That is the goal of His Holiness the Dalai Lama, to bring science into the core curriculum in monastic education. That is the next goal.

I think that the dialogue that has been taking place between scientists and Buddhist contemplatives over the last 20 or 25 years—ever since the first Mind and Life Conference in 1987 that His Holiness initiated—has produced really impressive outcomes. Now there is a new field in academia called the Contemplative Sciences. To make authoritative claims would be premature.

What is the next phase of this interaction in terms of the larger scale? I think we need some form of academic program that would teach what his Holiness the Dalai Lama calls secular ethics, which he has emphasized for many years. I think that's where we need to go to make a real contribution to the wider community—changing the very culture of people's mindsets—because ethics is the key for the harmony and wellbeing of society at large.

**Rajesh Kasturirangan:** I'm going to try to expand the question just a tiny bit in that I want to include not just Buddhism, but the other Indian philosophical and religious traditions. There is now increasing recognition that ideas from these traditions have just as much to say about how mind and consciousness are to be investigated, and that if

new insights are to come from these traditions they might over turn the way that this particular mind science is done.

But even more dramatic would be to take things that are at the foundations of science and apply the insights of these traditions. The mind sciences are a relatively small corner. Physics is considered the most fundamental science—and maybe mathematics is as fundamental as physics. One possibility is that even our ideas of mathematic and physics will change because of the insights we get from these traditions. To give you a quick example: we were talking yesterday about how we think of mathematics as just bedrock,  $2 + 2$  is always 4. But maybe that's just conventional reality. Right? If that were the case, then the entire foundation of science would have to be rethought. These are the kind of radical experiments that can be done to address how science itself is to be understood. Science has a specific history in the West; if it had developed in the East it might have taken a different shape.

These are the questions that we can now begin to ask because of this kind of dialogue. We can also consider the distinction between *is* and *ought*, which is so central to modern science. We might see that this is actually a false distinction—that the way the world ought to be and the way the world is are not that different from each other. Of course, for these contemplative traditions that's central because reality is not just the way the world is, but also the way the world ought to be.

**Monastic Graduate:** I think there are many things that we can gain from this kind of dialogue. It gives scientists and Buddhist scholars the opportunity to meet and share their knowledge. It also provides an opportunity for Buddhist scholars to meet each other. We belong to different traditions of Tibetan Buddhism and live in different monasteries. We don't have many opportunities to meet with our colleagues to share our knowledge, wisdom and ideas.

Dialogue also provides Buddhist scholars with the opportunity to learn from the scientists. For example, in Buddhism we have a

profound knowledge about how objects are viewed by the subjective mind but not much detailed description. When you look at a flower, for example, it is said that your consciousness, or the eye consciousness, is engaging with the flower, or that eye consciousness sees the flower. Science provides a more detailed description. Our science teachers have explained how light is formed on the flower, how light is absorbed and reflected from the flower and then goes to our eyes, retina, and the visual cortex and how the brain processes the whole image. This kind of detailed description enhances our own knowledge. This is just one example. There are many ways in which we can benefit from this dialogue with scientists and I hope the scientific community gains as well.

**Chris Impey** (Moderator): I would echo the sentiment behind that. Monastics and scientists share something—we both, sometimes, need to get out a bit more! Scientists can be monastic in their own way. Getting out, and looking at the world in a new way, illuminates the perspective you have on your own, or what you are familiar with, and I know that's true for me as a scientist.

To continue and answer the question—and to relate to what Paul said—in the West, and in our realm of professional science, many people adhere to the view of the late Stephen J. Gould, who said that science and religion were not overlapping. That's fine, but it ignores the fundamental fact that faith and reason coexist in human beings all over the world. For me, the fact that the dialogue works, is fruitful, rich, invigorating and inspiring to each side, and the practitioners, and makes them look at their own fields in a new way, is the biggest achievement so far.

The next step is implementation. We may hope for some of these grand advances of a general theory of neuroscience, but it probably isn't going to happen anytime soon. In the meantime, we have to chip away at some of the Western scientific paradigms—they provide no complete explanation, no perfect theory—and find ways to increase the landscape of overlap and co-operation, and scientific experiments

and exchanges.

**Geshe Jangchup Choeden:** It's a great pleasure and opportunity to be part of this conference and dialogue with so many great scholars and honorable colleagues. In the last three days, I've listened to scholars from many different fields—including the fields of neuroscience, physical science, experimental physics, and even the fields of rebirth and Tibetan medicine. It would take me half a year to read up on the literature in these fields and I would not get the same valuable and essential information. It's an unprecedented experience to be in such an environment and I feel that I have learned a lot.

I have access to a few books from time to time, and I remember that in one of his books Chris said that science, and culture, and spirituality are the creations of human beings and each has its own beauty. We need to be open to seeing the beauty in different fields of study and different paths. The participants in this conference are open-minded people from different fields. There are probably many hardline scientists who would not take part in these exchanges. I really do appreciate your openness. It is something I respect from the depths of my heart.

I think it is important that in future conferences we have more monastic scholars, and more open-minded scholars and academics from all the fields of science. As Rajesh said, it's also important to include representatives of other contemplative traditions. After all, it's a learning process. We can learn from everyone, even a child, so why can't we learn from other contemplative traditions too? We should always remain open. I think we should be open in organizing future conferences and dialogues.

**Chris Impey (Moderator):** That's an excellent sentiment. I think we have a clear message to expand the conversation. We heard earlier that it would be nice to have women more involved, and there are fields that illuminate many areas that we've been talking about, such as philosophy, which are not truly represented. There are other

contemplative traditions. Yes, the conversation can be expanded. If we become too closed a group, we just stay in our comfortable circle of people who are familiar with these dialogues.

To segue to the second question, I'm going to ask you what is the single most interesting, important, surprising thing you learned during the conference?

**Geshe Jangchup Choeden:** I learned a little bit about the black hole from dear Professor Doherty and I also learned something about neutrons. I learned many exciting things. I do appreciate that. Thank you.

**Bruce Greyson:** In one sentence, although Buddhist philosophy and scientific philosophy start with very different assumptions, I've learned how similar they are in the sense that their methodology is the same in looking at an assumption and then testing it out, not assuming that it's true, but trying it out and seeing whether it works.

**Geshe Nyima Tashi:** I learned from Dr. Greyson how they are seriously trying to find our mind outside the brain.

**Chris Impey (Moderator):** The thing that struck me the most—because it's present in the Buddhist tradition and empirically from Bruce's talk—is the idea of a mind not needing a brain. It's a game changer. In my field, it changes everything about the search for life in the Universe. We are looking for our keys under the lamp because that's where we can look for our keys. We look for planets around stars and life forms on planets that are like Earth. But if mind and consciousness and intelligence don't need a brain, then we don't really know what we are doing.

**Geshe Lobsang Tenzin Negi:** I literally learned something from every presenter, but one thing that really struck me was Dr. Ravindra's presentation on how the meditative states can have an effect on sleeping patterns. And, in turn, how such changes in sleeping patterns can affect health and have an impact on your well-being. That was a

new insight for me, and I'd really like to learn a little more about that.

Paul Doherty: I was most impressed by the way that the monastic graduates learn. I have never met a group that is so present while learning and takes such an active role in questioning and arguing. It's an active learning that I wish I could take back with me and spread around to American institutions of learning.

**Chris Impey** (Moderator): I've got to echo that. Having taught in the Science for Monks workshops, I would like to somehow bring the 22 million undergraduates at colleges and universities in the United States to be flies on the wall, to see what happens in the classrooms here with the monastics, and then say, "Go back, do your best, try and do this! And laugh more."

**Rajesh Kasturirangan**: Actually just a segue from what Chris just said, at the very end, and on a half serious note, the thing that I liked the most was that the monks have a great sense of humor, and even when we don't understand what they are saying, it's great to see people cracking-up both on stage and outside.

**David Presti**: Also in line with those comments, here is another university teacher who really appreciates the enthusiasm for learning among all of you. Especially for folks who had no previous exposure to science, had no kind of existing investment, the enthusiastic openness displayed continuously all the time is remarkable, and I totally agree, I'd like to bring all the students in America to witness this.

**Chris Impey** (Moderator): The second question gets back to the title of this panel discussion, which is "Serving Humanity." I'll read the second question and then crystallize it with a little more focus: Since we haven't solved the problems we hoped would be solved by the development of science and technology, what should be our future directions for solving the problems we face? That's a huge question. Let me give it a slightly tighter focus and ask anyone to respond to the question of how we take the things we've learned and talked about

and give them an application that benefits humanity, that improves people's wellness or state of being, or illuminates their lives in some way.

First of all, we don't need to be too despairing about science and technology. I don't think it's a negative-positive thing. The failures of the materialist, reductionist view of science have been clearly on display in the last three days. However, science and technology in the last century have helped to raise one and half billion people out of poverty and improved life spans by 20 years. That is a phenomenal impact on the human race, and there is no reason we can't feed a planet with 7 billion people. The landscape is not bleak in that regard; the failures are there but they don't overwhelm the successes.

As far as taking this in the direction of benefit, it's far from my field, but I've seen very clearly the ways in which the illumination of the boundaries of the Western view of these scientific fields leads to new insights and new ways of thinking. That's true even without the revolution that would accompany a paradigm shift with a true theory of neuroscience akin to our fundamental theories of physics. It's clear that there are ways that we can improve wellness—Bruce alluded to some very profound ones and we've heard some more this morning. There are ways we can do it using the information that is the landscape that the Buddhist tradition has experienced for centuries, and the ideas go back millennium. To bring those into the Western realm of medicine seems like an obvious way to improve lives. Bringing those philosophical ideas into the Western way of doing science “opens up the box” on our thinking and leads to the possibility of better theories in places where basically we are stuck. That's what I would see as possibilities. Anyone else?

**Monastic Graduate:** I teach Buddhism in my monastery and before I joined this one-month workshop I had no knowledge of science. I learned a great deal from the workshop and conference and it has strengthened many of my beliefs, as well as my faith in what I teach. I used to think that scientists were mainly concerned with material

development and making money. After listening to the workshop teachers and conference presenters I have come to realize that not all scientists are like that. I have also realized that scientists follow empirical evidence and that they see reasoning and empirical evidence as the highest authority. This is important for us. In the future, I will adopt the findings of any theory or field of knowledge that are driven by empirical evidence even if the findings go against my beliefs and tradition. I will follow the new path based on reason and evidence. After attending the workshop and conference, I now understand why His Holiness is encouraging us to learn science.

I'm not in a position to organize these kinds of dialogue, but I ask those who are to organize many more. We would especially like to thank Geshe Lhakdor and Bryce for organizing the workshop and conference. We would also like to thank the presenters.

**Chris Impey** (Moderator): Not to correct you but I think all the graduates of the Sager Science Leadership program, and all the students who have been through the Emory program, are indeed in a position to lead the dialogue themselves. That's part of the reason we are doing this. Maybe the dialogue is small, maybe it's within the monastery, with your young monks, or maybe it's outside in the communities near your monasteries, but you actually are qualified. You're equipped to continue the dialogue.

**Bruce Greyson:** How this dialogue can help humanity is a very important question because I think it is a question that scientists have gotten out of the habit of asking. I think one of the effects of this dialogue will be to remind scientists of why we are doing science.

When scientists apply for a research grant, or submit a paper for publication, we have to justify our choice of research participants, our choice of methodologies, our procedure, our instruments, our measurements, our statistical analyses, and explain how our study relates to previous knowledge. But we are not asked, "How will this make people happier?" We just assume that any advance in knowledge

will help humanity. As Chris pointed out, it often does, but not always. If we made it a part of every grant application to ask, “How will this make people happier?” that could change the type of research we do and how we do that research. I think we need to keep asking ourselves, “How does this work really help humanity, and how can we change it so it will do it better?” Just asking the question is half the battle, I think.

**Monastic Graduate:** When I took part in the neuroscience and science classes, I began to question my idea that mind is the only *real* thing and began to see the brain as more significant. After listening to the presentations in this conference, and especially Bruce’s presentation, it seems that mind, or consciousness, is the most important. This is one of the experiences I had during the conference.

**Geshe Nyima Tashi:** I was just saying to my Buddhist colleagues, “Why are we learning science? Why science and Buddhism? Why science and ancient culture? Why are we doing it? What could be the reason?” The reason has been made clear by His Holiness the Dalai Lama many times. Now, our responsibility is to work on that path. I was suggesting that it would be good to make our monastic colleagues—those who didn’t attend the conference—aware of science. Thank you.

**Pema Dorjee:** From my experience, there is much in the Tibetan medical tradition that can be shared during these dialogues. It’s very important. My suggestion is to at least study the basic concepts of Tibetan medicine.

**Rajesh Kasturirangan:** As His Holiness himself said on the first day, there is a need for a secular ethics that may come out of these dialogues. I think we need to expand that a little bit, we need a kind of package. I’m thinking of a cognitive tool kit, with things that are basic to science, reasoning, and ethics that everybody needs to know to be a citizen in the 21st century. Something that is easy enough for everyone to understand, that isn’t dependent on culture, and that will be of use

to all of us. Even if we cannot address all the problems of the world, we may have a method by which we can arrive at reasonable answers.