

## Panel Discussion

**Monastic graduates on the panel:**

**Geshe Tenzin Topden**

**Tenzin Dhondhen (Namda Khentrul)**

**Geshe Sonam Gonpo**

**Tenzin Lhadron**

**Chris Impey** (Moderator): Thanks very much, that was great. Let me start by asking the *geshes* if they have any questions to pose.

**Monastic Graduate:** This question is for both speakers. There are many stages in the history of scientific development. Quantum physics, particularly, has made a lot of progress in its understanding of very subtle details of particle physics. Compared to physics, neuroscience, whether in psychology or contemplative neuroscience or neuroscience in general, is lagging far behind. What are the major reasons for these differences in development?

**Chris Impey** (Moderator): I would like to hear both of you answer that.

**Bruce Greyson:** I am not sure I can give you a good answer to that. Neuroscience and psychology have been lagging very far behind in this, but some physicists are now trying to tackle this in ways that we can understand. For the first century of quantum physics, they talked

about consciousness as being an elementary construct in the Universe that has some causal effects on the physical world, but they never went into detail because they were physicists who study the material world and they don't deal with things like consciousness. In the last ten years or so, there have been a few collaborations between quantum physicists and neuroscientists to try to explain consciousness in terms of quantum mechanical processes. These are very rudimentary efforts right now, but they are bringing together psychologists, cognitive scientists, and quantum physicists to try and determine if there is a way to be more rigorous about how to define the role of consciousness in the Universe using quantum mechanics.

**Chris Impey (Moderator):** Roger Penrose has been a leading writer on this. It's not trivial, because there are still very profound issues in quantum physics and they are not very well understood within the realm of physicists. There are causal effects in the laboratory that are not yet fully understood. There are correlated, associated phenomena on microscopic scales that are not understood. It's one of those difficult situations where you are trying to marry a field that itself is still not fully mature after a century, with a field that is robustly immature. It's not clear how to proceed. In fact, you are not applying a finely honed, maturely understood subject of quantum theory to a brave new world. It's a little messier than that.

**Bruce Greyson:** I would add to that. These physicists who have been so brave as to tackle the questions "What does it mean to be conscious?" and "How does consciousness relate to the physical world?" are sometimes criticized by other quantum physicists who insist that quantum physics is purely a mathematical model, that it is not meant to be real, that it is just a mathematical way of trying to make predictions, and that it is a mistake to try to be concrete about it and try to be real about it.

**Chris Impey (Moderator):** The profound philosophical and conceptual issues raised by quantum theory were clear to the practitioners in the first few decades, in the 1920s and the 1930s,

to Heisenberg, Bohr, Einstein and so on, and they essentially set aside most of that profound subtlety and incomprehension in favor of something called the Copenhagen Interpretation, due to Neil Bohr's influence in the 1930s. They became pragmatists who applied quantum electrodynamics theory that is accurate to the 12th decimal place. It's an incredibly precise theory, it works in the lab hundreds of thousands times a day, and most practicing physicists choose to set aside philosophical explanations. It became, as Bruce implied, somewhat disreputable to put it on the table, although it was never addressed, it was never properly dealt with even by the titans of the field, the true geniuses who conjured up the theory. It's still waiting to happen.

**Gehse Lobsang Tenzin Negi:** Part of the reason that the physicists may not have seriously tackled the issues of mind and consciousness may have to do, again, with the methods by which the experiments were done with a heavy emphasis on the third-person approach. In many ways what prevented them from tackling the question is that they essentially had a world view of science as necessitating third-party observation, without room for the subjective experience; this is behaviorism. Behaviorism is the thing that scientists finally began to tackle. The psychology of the day was behaviorism, because you can measure behavior. They put the mind in a black box. You could not talk about the mind, but what you could talk about was the stimulus and the response, and you could measure the response. Only in the 1950s, when computers were developed and artificial intelligence emerged, did psychologists use this idea of information processing to create new models of the mind, memory, perceptions, and so forth. It also has to do with the method of investigating the mind. The third-person approach is not a direct way of investigating mental states.

**Monastic Graduate:** My question goes to Geshe Lobsang. There are some people with a philosophical background who believe that consciousness is separate from the brain. There are also many scientists who don't view consciousness and reincarnation in the way that we Buddhists do. What methods have you found most effective

in engaging with “non-believers?” And what plans do you have for future dialogue with them?

**Geshe Lobsang Tenzin Negi:** Over the past few years I have been in the West and have had opportunities to interact with some of the scientists and scholars that come from the Western traditions. Certainly, when it comes to the topic of the mind and the mental realm, the perspective of having previous and future lives is somewhat limited to religious traditions. And even then, monolithic religious traditions don’t accept the concept of a previous life. They maintain that you have this life and then it continues into the future, but there is no position about the previous life.

I am not that familiar with Western philosophical positions, but I have had some opportunities to interact with scientists, particularly cognitive psychologists and those who are working in the realm of emotions, and it is there that I find Buddhism and cognitive science have a lot to learn from each other. They complement each other particularly well when talking about mental states, like memory, how memories are formed, how memory is understood, perceptions, attention, emotions, and even emotional states like compassion and empathy. There is a growing understanding—not just theories but experimental-based understanding—about these various mental functions and states, and that’s where Buddhism has a lot to say. For Buddhists, the important thing is what we can learn from scientists about those physical elements that are involved in producing these mental states, and certainly for Buddhists there is a lot to offer in terms of how to cultivate and how to enhance those mental states. It’s a very rich field for interaction between science and Buddhism.

**Chris Impey (Moderator):** Why do we see very few women discussing consciousness here, or in general, when we know that they are the ones who bring life into the world? Their experience of forging a new life within may give us answers to where consciousness comes from.

**Geshe Lobsang Tenzin Negi:** I think we should definitely have

more women participating in this dialogue. I think there is no question about the role of women. They certainly are more empathetic; studies show that women have greater empathy than men. We definitely should have more women participating in all aspects of our future discussions.

**Chris Impey** (Moderator): An Action Item. In general, we see some dichotomy—maybe that is too strong a word—between Eastern and Western views or approaches, methodological approaches, philosophical, conceptual approaches. I don't believe in strong cleaving between genders in general and there are definitely illuminations that would come from having a balanced perspective.

**Bruce Greyson:** There are many studies showing that women experience more spiritually diverse states than men, and when they do experience these altered states they are more likely to engage them more fully than men. But men are far more likely to try to understand these states and translate them in ways that others can understand. Although more women experience spiritual states, you see more men trying to study them, trying to understand them.

**Chris Impey** (Moderator): A question from the audience that is probably for Bruce and relates to that business of having to describe a phenomenon. You alluded to out-of-body conscious experiences related to body senses—seeing, hearing, feeling—that are specific to the human experience, when you might imagine that an out-of-body experience could have all sorts of qualities well beyond sensory. Is that the problem that you described—the difficulty of verbalizing something that's maybe hard to verbalize?

**Bruce Greyson:** I think that is the problem, and it is best typified by the experiences of people whom Kenneth Ring interviewed who were blind from birth. From their near-death experience, they became aware of things, including colors, of which they had no experience. When we ask that they tell us about them, they used the vocabulary of vision, which is the only vocabulary we have to describe what things

look like. Clearly, they weren't seeing things; they weren't in their bodies. Whatever form or substance they were in did not have eyes, so they were not seeing things the way we were. Furthermore, for these people, their normal physical eyes didn't work, and yet we asked them, "What did it look like?" You have to use the words of vision, and we were forcing people who had out-of-body experiences to use bodily language to describe it to us.

**Chris Impey (Moderator):** This is a question from the audience for the *geshes*. Does Buddhism have a way of talking about some of the anecdotal evidence that Bruce was talking about? For example, a situation where the person who died was reincarnated as a person who was six months old, overlapping lives if you like, or the experience of meeting with relatives who are unknown to the person. Do some of those pieces of evidence that Bruce was talking about make sense in a Buddhist tradition?

**Monastic Graduate:** The evidence of rebirth that Dr. Greyson discussed this morning, like the birthmarks, isn't surprising to our tradition because we believe in reincarnation. We believe in life after death, and when we talk about life after death and reincarnation, we believe that our mind goes from one life to the next. Through that, reincarnation takes place. I can't say that I have had an experience of how reincarnation happens, but the best example that we can see in our society, or we can give you from our society, is the recognition of the high lamas or the high Buddhist spiritual leaders like His Holiness the Dalai Lama. We try to find reincarnations of these spiritual leaders. We might show them ordinary objects that belonged to the leaders in their past lives and there are many cases where they can recognize those objects; the present reincarnated lama can recognize those objects. These are the things our tradition and our belief have in common.

**Monastic Graduate:** In addition to what my friend has said I would like to give two examples about remembering our past lives. I have a relative and she is a nun, and so she has a spiritual teacher. Her

spiritual teacher gave her a spiritual name, Lobsang Dharma. After some time her spiritual teacher passed away. Later on, they found his reincarnation. When she came to know about her spiritual master's reincarnation, he was two or three years old. The nun went to visit her spiritual master, that reincarnated young boy, and as soon as she entered the room the small boy recognized her and asked, "How are you doing? How did you come here?" There is also another example where an old man gave a *togag* to a nun, and after that man passed away he was reborn as a small boy in their family. Later, when he was old enough to speak, he recognized the *togag* that was given to this nun from his previous life. These are a few examples that I am aware of, and such examples are very common in our tradition and our society.

**Bruce Greyson:** There may be other ways in which a child can get information about a past life. For example, is it possible, in theory, that a deceased spirit could possess a child and cohabit that body with the child's spirit, or a disembodied spirit could theoretically displace a child's spirit and take over that body, or information about a deceased person could exist in some discarnate state, the way information from your personal computer gets loaded up to the cloud where other people can access it? Maybe this child is accessing this cloud information. These are all theoretically possible scenarios, but none of them explains the data from these children as well as the reincarnation hypothesis does, and even the reincarnation hypothesis doesn't explain all of it. What we might be seeing is that these cases of apparent past-life memories do not all have one explanation. Some may be better explained by reincarnation, some better by possession, and some by other better means we don't know of yet.

**Chris Impey (Moderator):** I suppose that if consciousness is compared to some kind of energy, then it can be measured. If that is so, if consciousness leaves the physical body, the body should be lighter in its absence. Have there ever been attempts to measure this? This reminds me of attempts to measure the weight of a soul as it flees the body. You might know the research.

**Bruce Greyson:** There actually have been some attempts to measure what departs at death. The first one I know of was done by William McDougall at Harvard University around 1910, and he came up with 37 grams as the answer. But various people have noted that when someone is on his or her deathbed, water vapor evaporates from the body and there are various things that can account for a small amount of weight loss. You really need to do this type of study in some type of vacuum-sealed enclosure. But the question really is not only what are you measuring, but why would we assume that consciousness is an energy that we are able to measure? We know of certain types of energy that do *not* seem to correspond with consciousness, but there are obviously some energies that we are not able to measure at this point. We often make assumptions about what we can measure, what we have the technology to measure.

**Geshe Lobsang Tenzin Negi:** This is not commonly accepted within all schools of Buddhism, but certainly from the Vajrayana point of view consciousness is not completely independent or separated from any form of energy. The cause of consciousness is certainly correlated with the cause of energies. They even have their own biochemical substrates, but the subtle consciousness, the most subtle consciousness, which is usually what the clear light of death is referring to, and its energy correlate, if you will, are not necessarily two distinct entities. It is basically the same entity with two expressions. I don't know if there will ever be a device that can really measure such subtle energy. Nonetheless there are phenomena in the Tibetan Buddhist tradition, as you all probably know, when accomplished masters die and enter into what is known as heart meditation. Such a person's physiological states remain intact, instead of deteriorating or decomposing. Sometimes, they can go for weeks. Just couple of years ago, one of the great masters in South India remained in that post-death meditation for 18 days.

**Chris Impey (Moderator):** Mention of the heart made me retrieve a question from the audience. This is very much in the manner of Western scientists who, of course, consign the heart to just being a



pump. Why are scientists not investigating this, when, according to Tibetan medicine, the heart is also important to mind function? Are Western scientists missing something in looking so strongly at the connection of mind and brain?

**Bruce Greyson:** There certainly are large collections of nerve cells in different parts of the body called ganglia. There is one around the heart, and there is one in the gut. In thinking about the octopus nervous system that you were mentioning, I remembered that there are nerve ganglia at each of the eight tentacles that are obviously very complex and can do something that creates a response to a stimulus, whether or not you can call that thinking. It may be that the reason some people can think and feel without a brain is that the other parts of their nervous system and nerve ganglia in other parts of the body are carrying on some of these functions. We just haven't studied ganglia in other parts of the body as well as we've studied the brain. And it may be not only nerve cells, but also other cells that can carry on some of these functions. For example, the heart muscle certainly has its own electrical conduction system, which is independent of nerve cells in there. If the heart muscle itself can conduct electrical signals, maybe there is another way of communicating information that we haven't really studied.

**Chris Impey (Moderator):** The octopus' distributed brain is actually quite highly functioning. If an octopus loses an arm in an attack, that arm will continue to crawl away and continue to make quite complex camouflage patterning for a while. After talking to a field researcher on cephalopod intelligence, I was cured of eating something that may be smarter than I am.

**Geshe Lobsang Tenzin Negi:** I believe that there is now a certain group of scientists—they are small—who do put as much emphasis on the body as they do on the brain. At Emory University we have a Department of Psychiatry where they are very much about looking into the body. I don't remember the specific substance they use, but apparently when they inject it into the body of a rat they can see that

it makes the rat smarter and faster. Also, isn't there an understanding now that there are probably more cells in the gut than in your entire body? And those cells in the gut are actually processing much of the information that our brains process? There is a small group that is interested as much in the body as the head.

**Monastic Graduate:** My question is for Dr. Greyson. You have done a lot of research on consciousness that isn't so much related to the brain itself and there is a lot of evidence of rebirth and life after death. How convinced are you by this kind of evidence that there is life after death, or that consciousness is not dependent on having a brain? From the Buddhist point of view, when we talk about the purpose of learning something or doing something, the purpose is to benefit the physical world that we live in and the living beings that are in this physical world.

**Bruce Greyson:** How convinced am I that there is life after death? I think it is more likely than not. I can't put a number on it. I was raised in a Western scientific tradition where we don't ever know the answer; we just collect data that make one answer more or less likely. The evidence has convinced me that it is certainly possible, and probably likely, that we survive death, but I can't say that I am convinced. I think that is something the Buddha probably would approve of—not saying you are convinced of it.

The question of consciousness existing without a brain is interesting to me intellectually. But what really attracts me to this study of near-death experience is the way it does change people's lives, making them more compassionate, more loving, less attached. Approaching this from a Western perspective, I want to try to take apart the near-death experience and see what it is about that experience that makes people change in those ways and how we can replicate that. You asked about the value of the Buddhist traditions in cultivating these mind states, and I think it is a very valuable thing for Western science to start to approach. It's something that Western science hasn't done a whole lot with, and I think that is the value of programs, like

Geshe Negi's, that make bridges between the Buddhist tradition and the Western scientific approach. I think that's the way that Western science needs to go.