



REPORTS FROM THE FIELD



SCIENCE FOR MONKS

Science for Monks:

Reflections On Interviews with
Participating Scientists

2014-2015

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Reports from the Field:

Inverness Research supports the Science For Monks program through a process of “groundtruthing” where we help the program articulate its theory and intentions, and then make site visits to the field to check the congruence of theory and field realities. This report is part of a series of Reports from the Field where we ask senior researchers to write about their site visits sharing what they learn from their in-depth interviews, observations and discussions with monks and faculty. The reports are intended to maintain an informal tone and reflect the researcher’s impressions as well as the data they have gathered.

Background on this report

These findings and reflections were written by Pam Castori, a science teacher and senior researcher at Inverness Research Associates. In fall of 2014 Dr. Castori conducted structured phone interviews with six scientists who were new to the Science for Monks program and would be participating as teachers and presenters at during the program in November. The scientists were interviewed with the purpose of gathering ideas they had prior to the work with the program and monks, in particular whether a claim made by Inverness that even though the program is designed to bring Western science ideas to the monks, the scientists also reaped benefits from the dialogue and exchange of ideas about Western science and Buddhism that would happen during the workshops. In the spring of 2015, the same six scientists were interviewed again. Similar questions were asked with the exception of one question that asked them to rate their experience in terms of the benefits to them personally and/or professionally.

This document represents main ideas and key quotes culled from the individual pre- and post-interviews of each of the six scientists new to the Science for Monks program.

Background on the Science for Monks program

The Science For Monks leadership program is designed to provide Buddhist monks and nuns with an opportunity to learn science more deeply and broaden the connections between science and Buddhist philosophy. Cohorts of monks and nuns spend three years preparing themselves to be leaders for their peers and to help operate local science centers within their home monasteries. Each leadership cohort takes on different projects aimed at helping them improve their skills and capacity, through writing, developing lessons and hands-on activities, creating a community exhibition, and other outreach and research activities they as a cohort decide to take-on.

In 2017, the leadership program was developing its third cohort of leaders, and the monks and nuns participating in the 3-week institute were attending their second annual institute.

Science for Monks: Reflections On Interviews with Participating Scientists

This field report is organized into summary findings in the following thematic areas:

- About the Exchange
- About “Science”
- About Benefits to Scientists – Their Own Research and Personal Benefits

ABOUT THE EXCHANGE

- There were some deep differences in understanding on the part of Western scientists and the monks about the terms of science.

Terms used like “science” and “consciousness” and many others that were used in the context of the Science for Monks program have different meanings and connotations for the Westerners and for the Buddhists (even for the Buddhist Westerners). These differences go deeper than definitions or semantics and have to do with what the words *mean* in each culture. For example, terms such as “science,” “meditation,” “consciousness,” “(self) compassion,” and “mind” all have meanings that are culturally contextualized and may actually not be very close in terms of common understanding across the cultures.

In some ways the dissonance in what comes to mind when a scientist says “science” and a monk says “science” may have been a barrier to understanding on some occasions during the exchanges.

I wasn't really prepared for just how much this exercise was going to take us back to the basics. It is almost like every word spoken needed to be defined in its context and how we use it... I anticipated and thought that basic words like emotion or happiness or consciousness were universally understood, but it really was eye-opening the degree to which even basic understandings of words were so difficult.

One of the things that I still think about a lot in my kind of daily [therapy] practice with patients here is, we talk a lot about the idea of self compassion which is something that we as therapists promote very much in our daily kind of practice. We have this idea that it is important to kind of love yourself before you can love other people and you know, we really try to build people up and build up this self compassion piece. And it really, as we were talking about this as a major goal of teaching mindfulness to patients and is that we are trying to increase all compassion and the monks were kind of like, “whoa... you guys have it all wrong and why are you teaching self love and self cherishing to people? You don't need to love yourself before you can love other people even though it can go the other way too, that you can show love for people and that will ultimately

increase your respect for yourself.” So this kind of an illustration of how we understand terms and our practices really within our own culture lens and that was a big, we had a heated debate about that....

I know that the gentleman Eric who was teaching neuroscience, he got through a week of talking about how molecules pass through membranes before he realized that they didn't even know what a cell was. And so, he was talking in these really abstract terms with big words and they didn't even have that basic understanding of the structure of a cell... so I think there are some things definitely if they could study beforehand, or at least have to reference to as these things come up and then just talk about them.

- There were, however, some science concepts, presented from a Western point of view, which seemed to be inherently understandable to the monks.

Some scientific concepts seemed to ring familiar to the monks because they could make connections with concepts they had long learned about in their own religion/culture. For example, the concept of evolution, and of organisms getting more complex over time, seemed to resonate with their ideas of reincarnation.

We talked about it, and I explained the idea of evolution and how things became more and more complex over time, organisms did and [the participants] lit up and I thought 'oh wow, I did a great job teaching it, 'which wasn't necessarily the case and what happened was they said 'that fits perfectly with our idea of reincarnation.' I thought that meshes exactly. You are explaining a similar concept to which we explain in a completely different way. I thought 'oh, that is wonderful and it does mesh and these stories are very similar to the stories that we tell in some ways.' So they are just thrilled, that this is telling the same story that they had been telling their whole lives.

- Encountering preconceptions about particular concepts on both sides moved from discussion to “heated debates” or what could be seen as arguments.

One heated debate centered on the question: why do science? The scientists encountered the monks' conception of science as reductionist. The monastics would say, “you guys know everything about nothing. Why are we doing this and what is the point of all this and what is it actually teaching anybody?”

Another topic or concept that was understood to be very different things was the nature of consciousness. The view from the Western science perspective is it comes from physical properties of the brain, the way the brain works. The monks think that consciousness “...uses the brain as its manifestation... it runs in the face of all the science that we are doing ... a very fundamental discrepancy.”

...sometimes we would go through very heated debates and intense discussions and then we would be totally like rolling on the floor laughing and it was so much fun. There was this tremendous emotional flexibility that was quite remarkable in them...

These heated debates go much deeper than semantics. They represent conflicts or discrepancies in the ways the two cultures conceive of a particular construct or phenomenon – e.g. compassion, science, consciousness, or meditation. The debates illuminated fundamental differences in the preconceptions the monks had about science, and that the scientists had about Buddhism.

ABOUT “SCIENCE”

- Most of the scientists interviewed were not prepared for the lack of knowledge or even complete lack of exposure the monks had around science.

In the West, we say “science” and can easily imagine a process and a pursuit of understanding. The monks had limited or no ideas about either the process or the content. Western science as referred to by the project scientists is really “experimental science.” The hard-core researchers view their “science” as “experimental”, with a whole set of protocols and frameworks that share a common process and methodologies. This is the scientific enterprise as we know it in the West. The monks appeared to be ignorant of this process. However, one could argue that what they do in terms of inquiry and being driven by curiosity and the desire to understand is similar. Regardless, these terms, and the expectations the scientists had for some knowledge around them, met up with learners (the monastics) with very little or no exposure to the whole Western science enterprise or paradigm (the canon of science).

The other thing is many of the people had very little experience in the Western science concepts, but the amazing thing was they would ask a question and it would be really deep. They hadn't really heard of this stuff before and then they come back and they ask something and you go, 'Huh!'... they will ask you a question that nobody has asked me before, but it is a really basic question that I should know the answer to and I go, 'that is a great question!...' Like questions about forces or colors or how we perceive things and I will say, 'well, that is just the way it is, why is it important? Because that is the way it is. I don't really know and I don't know if anybody else really knows.'

- Limitations or limits or boundaries of Western (experimental) science came into focus and into the consciousness of the scientists. The exercise of presenting and discussing current scientific theories and methodologies with the Buddhists was like holding up a mirror to science.

I was teaching about decision-making and the monks were asking, 'so how can we scientifically check whether somebody makes decisions that are going to have them be suffering or whether they are healthy?' The question of suffering versus not suffering is not one you normally deal with in cognition. So we have in the West this separation

between the science which is supposedly at least value-free and then the metaphysics or ethics or the philosophy at least and that is more about values. And they of course didn't have that. For them, the value question of 'is this going to help people or is this going to make people suffer,' well it is an integral part of the way they did science.

...for them the physical and the metaphysical are not two separate things...

- The scientists all ended up spending time talking about things they didn't anticipate they would need to talk about.

For example, one gave the example of trying to explain the difference between introspective science ("figure out how the mind works by observing your own mind and try to come up with reliable observations about that") and experimental science or third-party observations ("if you are having trouble finding meditators for your studies, why don't you just study yourself?").

- Based on the descriptions of the debates about self-compassion, compassion, mindfulness and PTSD, depression and anxiety, an agreement emerged about the need to customize an effective educational practice based on each student's unique set of circumstances and ways of learning.

One of the most interesting things that we talked about in terms of my research was that when we teach meditation, we basically apply for a grant or write an IRB, we lay out a plan of how we are going to teach them meditation and then it is often a one-size fits all approach where we say, the first week is going to be learning this skill, the second week is going to be learning this skill. The monks ...didn't like that aspect of what we were doing because they thought that in their tradition every monk or nun has a teacher and the teacher will get a sense, like an intuitive sense for what their students' intellectual style is and what kinds of problems they struggle with and whether they have anxiety or some basic thing and then they will tailor the students' progression like in meditation and the different types of meditation that they based upon the unique problems and then unique disposition and that is something that I think we need to do a lot more.

- Given the widespread interest in, research and practice around mindfulness, meditation and compassion in the West, there is a sense that pieces are missing from its emerging tradition that the monks can contribute to.

Living in a context where meditation and compassion are central to their daily experiences (and perhaps even being born into that way of life, world view, and practice, vs. attending the workshop and learning in bits and pieces) raises questions around what Western traditions might be missing (e.g. a spiritual or religious component). This may stem from the significant difference in the ways in which the East and West conceptualize the mind. See the diagram at the end of this report that aims to capture some of these key differences.

ABOUT BENEFITS TO SCIENTISTS – THEIR OWN RESEARCH AND PERSONAL BENEFITS

- One benefit that came from this project in terms of the scientists' research is a conversation amongst the scientists who participated – which perhaps by now has reached the planning stages – about designing a research study involving the monastics as more than just the subjects to be studied. This would be where the researchers and the monks *collaborated* on a common research study.

The idea that is currently out there, well at least that has also been a conversation with Bryce, is to not just come up with things ourselves... but then also include the Monastics in the thinking... for example [asking them] 'when you are in this debating, what do you think is going on and how should we study that, what do you think?' So to have them [participate] and maybe help them also conduct experiments in other visits in-depth.

- A majority of the scientists either practice meditation of some kind or have a keen interest in it; meditation plays some part in either their research, their teaching, their practice, or their lives. So for most the personal and professional benefits overlapped.

For example, an informal chance experience gave one scientist an opportunity to visit the community. The scientist had dinner with one of the lay Tibetan's family. This experience inspired him to figure out how to help the exiled Tibetans, and he is working now on how to send a crate of Western textbooks there. [

- Professional collaborations grew and are growing as a result of participation in this program.

It was kind of a game changer both personally and professionally. It helped me realize some research ideas and think through some things differently as well as personally... what I am excited about is that a lot of relationships formed while I was there and have made me [work] collaboratively with other researchers that were there – which is really exciting – as well as with other monks.

- Another benefit to the scientists is the longer-term relationships some were able to build with monks.

Some of the scientists continue long distance conversations about scientific phenomena and in one case, outside of the program, continue to share strategies for helping people with Post-Traumatic Stress Disorder. The dialogue continues amongst and between these Western scientists and the monks through two primary mechanisms: 1) continuing collaborations amongst researchers is on-going and has taken root and shape since the workshop – exploring new or expanded ideas from the conference in their research together, and, 2) continuing relationships between researchers and monks established through email, skype, etc. in terms of sharing personal experiences, thoughts, questions, etc.

One scientist also mentioned the benefit of being part of a ripple effect of sharing science:

As far as content goes, it was great to feel like I was affecting not only them, but also whomever they were going to touch in the future. ...I teach teachers and people over here [in the US], but I feel that over there I would have even more of an impact, and it seems like it will spread even farther.... There is almost a void there in this area, so it just seemed like anything that I provided them, not only did they really like it, but with the Geshe group I was teaching them to encourage other people to learn science.

One of the things in life is that I always wanted to feel like I had made a contribution to society and I think this did it... For years in my life I felt a need to get all of this material out of my head, and I have to contribute to science education and make sure I have a lasting legacy. When I was there... it was really a milestone moment... I have hit a good peak or milestone where I could take it easy a little more in life, because I am always driven.

- The scientists rated the overall experience very highly in terms of personal and professional benefits (all except one rated the experience a '5' (highest rating/most beneficial) on a scale of 1 to 5; the other rated their experience a '4').

For me it was definitely a 5. I came back and learned a ton about India and about modern day Tibetan monasticism and I learned about the canonical Buddhism from Tibet... I learned a ton and I hope that I taught a ton about science. I think that were I asked to be a teacher again I would probably do things a bit differently knowing what I know now.

[I would rate it] 5. Tremendously beneficial. The main reason probably is that my mission I think in life is being a translator in some sense, a translator between Western science and these concepts about training the mind from the Eastern perspective and while I do other research. I think this is the part of my research that I care most about because it is personally very important for me. ...this was definitely one such setting in which I could be a translator in that sense and also have the feedback from the Monastics about whether it made sense to them and to get new inspiration for the translation of what I felt, what I had learned from that tradition and then try to implement in my own life and try to think about it in a scientific way or in an experimental psychological, neuroscientific, those kinds of ways and then to feed that back to the Monastics...

A 5. It has just opened my eyes to so much new that I had never considered. Gosh, I would say it is one of the highlights of my life so far, because of everything we've been talking about. It has really given me a new perspective and excitement about learning – well even learning about Buddhism. I feel like I came back and I have been reading more than I would have otherwise about Buddhism and trying to understand more about how they think and where they were coming from.

I would rate it a 5 because I had a great time and I really appreciated it and would love to go back again. I felt that I was being useful in the world and not only to help these guys learn, but it sounds like they are encouraging the advancement of science in their culture because the society itself was in essence squashed by the Chinese.

I would say a 4 and the only thing that doesn't make it a 5 is that I felt like I had a lot of burning questions that I didn't have time to (get to). Everything took five times as long as we allocated time for and even in our more casual key discussions and there were questions that I wanted to ask and get feedback on, but we just didn't get to those, and that is the only reason that I am not giving it the full mark, but I loved it and I still think about it a lot and hope that, I think and one of our other graduate students was hoping to apply for some grants to go back to India and do some research on the monks and nuns there and so, I think that it has been hugely awesome experience for me and I will never forget it and I never thought in my life that I would ever get a chance to go to India and participate in this context.

General comparisons that surfaced between Eastern and Western ways of knowing

