



MIND & LIFE
I N S T I T U T E

Illuminating the Mind: Exploring Buddhism and Science with the Dalai Lama The Meditative Technology of Introspection with B. Alan Wallace

B. Alan Wallace (00:09):

In terms of the title of my presentation here, one could say this is really quite an extraordinary claim for a title. As if in 12 slides, that's all I have, I'm going to be summarizing Buddhist contributions to first-person cognitive science. And of course, that is not the case. It's a very vast topic, and I'm going to be focusing on a fairly narrow range, focusing especially on the practice of shamatha. But one area where I think Buddhist tradition may contribute something very significant to the scientific tradition and in turn benefit from the scientific tradition.

(00:43): In terms of the overall framework, or subject, for my presentation, I want to first paint a very large picture of the framework of Buddhist practice, which is familiar to all Buddhists here. The actual nature of shamatha, shamatha being a Sanskrit term which is really referring to an array of methods for refining attention skills. The challenge is for introspection. That is, if we are going to include introspection as a means of inquiry, seeking to understand the nature of the mind, the potentials of the mind, very deep issues about the nature of consciousness itself, are there challenges built in, or is this going to be very easy to integrate into science?

(01:19): The fact that introspection is not used extensively or rigorously in modern mind sciences indicates there may be some problems here, in which they must be addressed. And then the introspectability of introspection, [foreign language 00:01:32], that is for a full understanding, if such is possible. Or even to approach a full understanding of the mind, one must, I believe, include first-person perspective. It's indispensable. You can't skip it and just study the brain and study behavior and never rely on anybody's first-person account of their own experience.

(01:51): Then the question is, can the introspective observations be more rigorous? Can the reports be more sophisticated? And this is where Buddhism, I think, has much to contribute. Final point, that David has already made, so I will make it very briefly, but the complementarity of Buddhist and scientific methods of inquiry, the great strengths of science, tend to be not the strengths of Buddhism. The strengths of Buddhism, likewise, overall not the strengths of modern science. And then I'll end with quite a number of open questions, some of which may be interesting for our following discussion.

(02:21): This framework of Buddhist practice is true, I believe, pretty much of all schools of Buddhism, that the foundation is really ethics. It is leading a wholesome way of life, it is seeking

to do our best to avoid injury. So now I'll address the general audience, by means of our activity of body, speech and mind, do our utmost to follow the principles of ahimsa, of not deliberately injuring, on the one hand. So that's the negative side, try to avoid that.

(02:49): On the other hand, when possible, when the opportunity arises, seek to be of service. Try to help, as David so well said, alleviate suffering, bring greater happiness. And this is often likened to the earth. And that is at the foundation for, I would really say all spiritual practice. But with total confidence, I would say it is the foundation of all Buddhist practice. Without this, you really don't have Buddhist practice.

(03:12): On that basis, then we have the second tier or broad training within the Buddhist path. And that is samati. Now, this has become an English term now. And samati generally is understood as some very focused attention, or maybe some higher meditative state. Its narrow term is single-pointed attention, very focused attention. But when we're speaking of the training of samati, not simply the practice or the mental faculty of samati, but the training of samati, then it's including much more than simply developing attention skills. It would include, for example, the cultivation of loving-kindness, compassion, empathetic joy, equanimity. It entails many practices designed to really bring forth a very wholesome quality of mind and to achieve exceptional states of mental balance. So, not just attention skills. So that's the broader framework. Be ensured that the practice of samati is designed to bring about an exceptional state of mental health, well-being, and balance.

(04:10): And so, since the principle instrument of inquiry in the Buddhist tradition is not externalized, it's not a telescope, it's not an fMRI, your principal instrument of inquiry is your own mind. If your mind is dysfunctional, [foreign language 00:04:24] or [foreign language 00:04:24], dysfunctional because it's just flip-flopping between dullness and excitation, and then you try to engage in some rigorous inquiry with a mind that is getting dull and distracted, dull and distracted, then the inquiry is not going to be very rigorous. And so, in Buddhist inquiry, the primary instrument to be refined, as one could say, contemplative technology, is your own mind. And that really is the task or the purpose of training in samati. The culmination of the Buddhist path is the realization or the experience of wisdom, insight.

(04:58): And unlike many religious traditions, in Buddhism the root of suffering, the fundamental root of suffering, why do we suffer, is identified as ignorance and delusion, and not that we've been disobedient to God, that we don't have enough faith, that we've not submitted sufficiently and so forth. So, it's not theistically based on trying to please somebody else. But in fact, we suffer because we're ignorant, and therefore if you want to be free of suffering, you must've supplant or replace ignorance with knowledge, insight. And it's not just coming up with the right answers, believing, having all the right beliefs. Because you can have all the right beliefs and still suffer enormously.

(05:36): So, belief is not the same as knowledge. So, this is the largest gestalt or overall form of Buddhist practice. And everything I'll have to say will fit into this. But you can see the arrows, wisdom is not the foundation for ethics. It is ethics, samati and wisdom. Having said that though, it's not one-way influence. And that is, as you develop your abilities in samati, this enhances,

supports ethics. As you develop greater wisdom, this supports and enhances samati. And so there's a synergy, [foreign language 00:06:06], among the three. But overall, this is the hierarchy. So, now going to a very specific practice. I teach this a lot, I emphasize this a lot, but it must be stated that within the large framework of Buddhist meditative practices, which literally does include hundreds of different meditative practices, shamatha, I would say, is not the most important, it's one of many.

(06:28): But if one is missing the qualities of attention that you cultivate through shamatha, then none of the other practices will go very well. That is, if your mind is still very prone to laxity, [foreign language 00:06:40] or excitation, [foreign language 00:06:42], none of the other practices, even the highest practices, dzogchen, or [foreign language 00:06:46], the practice will be very high, the practitioner is quite low. In which case you don't get the fruit.

(06:52): And so there are two faculties, or mental processes, and Rupert will have a lot to say about this later on, or at least as much as he wants to say. Within the list of 48, 51, 52, but two mental faculties are utterly indispensable, [foreign language 00:07:08] for the practice of shamatha. And one of these is mindfulness. Now, here is a definition of mindfulness that is textually-based, very long history, I think non-controversial. But it's not the same as the definition of mindfulness that one finds today in modern psychology. It's not to refute one, it's to say this is a broader umbrella, a larger term than the very specific definition that is used in John Kabat-Zinn's marvelous work in mindfulness-based stress reduction, and overall very, very commonly now in more and more studies. So, here's one definition that is really quite common in broad strokes to the Theravada, to the Mahayana.

(07:44): This is not controversial and it's not sectarian. So, mindfulness is a faculty of sustaining voluntary attention continuously upon a familiar object without forgetfulness or distraction. Now, the term in Pali, Sanskrit and Tibetan, [foreign language 00:08:00] has a large connotation, or meaning, of recollection, of recollection. So, mindfulness can be understood in three ways. And that is, I recollect what I had for breakfast this morning. We can call this retrospective mindfulness, looking back. I'm practicing mindfulness of breathing. I'm not remembering breath I had yesterday, it's an ongoing flow of recollection, recollection, recollection, trying to overcome the dispersion, [foreign language 00:08:26] of the mind. And so it's present-centered mindfulness, but it's very specifically focused on the sensations of the breath. So, we have retrospective, we have present-centered, which is very central to shamatha, and then we also have prospective memory moment, [foreign language 00:08:41].

(08:41): So, for example, as you're in dream yoga, *milam naljor*, as you're falling asleep, you may create a very strong resolve or [foreign language 00:08:49]. Tonight when I'm dreaming, I will recognize that I'm dreaming. I will recognize the dream state as the dream state. You're sending your mindfulness into the future, to remember to do something in the future when you're dreaming. So, there's retrospective, present-centered and prospective. The moment-to-moment awareness in the present moment is definitely a form of mindfulness, but it's one of those three. And it may be very focused on the sensations of the breath. It may be very open, as in open presence. There is mindfulness there, but it's not selective. So, mindfulness is not at all in contradiction to or incompatible with samati. In fact, I believe it's impossible to develop

samati without developing mindfulness. So, there's one mental factor. There is, in this context I'm calling this meta attention, but now in the context of shamatha, you're really monitoring the meditative process of practicing shamatha.

(09:42): So, I'm calling it meta-attention because it's a monitoring of the attention process. And it's very specific, so here's the definition in this context. There's much broader meta-introspection. But now within shamatha, what you're specifically focusing on is, here is the faculty of monitoring the quality of attention, swiftly recognizing whether it has succumbed or fallen to either excitation or laxity, [foreign language 00:10:07]. That's really the primary function of introspection. It's to be used and to be refined, because as you develop along the path of shamatha, you must learn how to recognize subtler and subtler and subtler excitation, and laxity. So, that means you not only utilize it, but you must refine it to a very sharp edge. So, what are the results of this, of applying and cultivating mindfulness and introspection, or meta-attention? In the classic texts, they really speak of two qualities of attention that are specifically or explicitly cultivated.

(10:41): The stability and vividness, [foreign language 00:10:43]... Having taught shamatha for about 33 years to Westerners, I found... And also myself, in my own practice. I did my first retreat up here almost 30 years ago. His holiness was my guide in that practice. And I went in with great determination, very strong will-power. And I was thinking, I must apply the first type of attention, which in Tibetan is called [foreign language 00:11:05], squeezing attention. So, I got up in my hut, practicing 10 hours a day, starting at 3:30am. And I said, I will squeeze. And of course, you all know, I didn't. But of course, after a very short time [foreign language 00:11:20] you get totally stressed out, uptight. All the joy goes from the practice. You've been trying very hard, but then you hit a ceiling and you're going nowhere.

(11:29): You're just getting sicker and sicker. And so, as myself as a Westerner teaching Westerners, there is a point that we can be more like a Tibetan nomad from 100 years ago. In general, maybe a bit more relaxed, not driving cars at 70 miles an hour, not multi-tasking like in the modern world. First of all, learning how to be more like a Tibetan. Traditional Tibetan, not a modern Tibetan. Or a rural Indian 1,000 years ago. More relaxed, just looser, because we find references to [foreign language 00:12:02], relaxation, but not very strongly emphasized. In the shamatha, I think for the modern world, we must strongly emphasize it. And out of relaxation, then stability. Out of stability, vividness. So once again, there's a kind of hierarchy. But first of all relax, be happy. And then stability, a bit more effort. And then out of stability, then the vividness. So, there's a hierarchy, [foreign language 00:12:25].

(12:24): And then, as with [foreign language 00:12:28], the ethics, samati wisdom, it's not just a hierarchy. As your mind grows calmer, more stable, you become more relaxed. As your mind becomes more vivid, this helps a lot for stability, because when you're very vivid you're very interested. And if you're very interested in something, it's easier to stay on track. So those are the three qualities. This I would call the technology, contemplative technology, of Buddhism, because you're taking your attention and refining it so that you can use it for the acquisition of wisdom. But also cultivating qualities, virtues that we all value, that is with your ability to shamatha. You'll be much more efficient in cultivating, loving-kindness, compassion, generosity,

patience, and so forth. And they in turn will help you in your shamatha. So the point here, though, the connection between shamatha and vipassana is a statement often quoted including in the Kamalashila, the [foreign language 00:13:25], the mind established in equipoise discovers reality.

His Holiness the Dalai Lama (13:37):

[foreign language 00:13:37]

B. Alan Wallace (13:38):

And so there's the connection between this kind of contemplative technology and what I think the scientists were quite content to say, contemplative inquiry or contemplative investigation. [foreign language 00:13:49]. So, there are dozens of different shamatha methods, and both in the Theravada tradition and in the Mahayana tradition. Different types of practices are prescribed, almost like a doctor prescribing a medication, for people with different temperaments. I have selected out of the dozens of different methods of shamatha, I've selected three that we used in the Shamatha Project. This was comprised of two three-month retreats with actually a total number of 70 people in the retreat. 60 people were subjects in the scientific study, and having experimented with these three methods, all of them very traditional. So, I am not frankly interested in devising entirely new methods of Buddhism.

(14:33): I think it's fine to do that. I'm not interested. I am much more interested in selecting methods that clearly are effective in the modern world and possibly some minor adaptation, like relaxing first. And so I've selected these three, the first one framed primarily from the Theravada tradition, the actual method, but it's practiced in all major schools. The second one, we're calling observing the mind [foreign language 00:14:58]. And so, in this one, and I'll get to this later, but it's observing the events of the mind. Thoughts, mental imagery, and so forth. Now there's a simpler practice and it's a subtler practice, and that is just awareness of awareness. In [foreign language 00:15:12] terms, you are simply attending to the [foreign language 00:15:15], the sheer luminosity, the sheer cognizance of awareness. You're not even looking at thoughts, images, you're simply resting, [foreign language 00:15:24], you're letting your awareness rest in its own place and simply being aware of being aware.

(15:30): So, it's withdrawn from even the contents of the mind. And this too is a shamatha practice. And in fact, it was taught clearly by the Buddha Shakyamuni in the Pali canon, [foreign language 00:15:40]. And he spoke of this as a very, very deep practice of shamatha. So, I've taught these a lot. I find that one or more of these tend to be very accessible and very beneficial to a lot of people. So, I selected these three. But all of these are traditional, these are nothing new for me. So, in terms of now just a very brief account, mindfulness of breathing. And I want to now explicitly tie this in with long-term memory. And so, when you are practicing mindfulness of breathing, you have to remember what the instructions are, which means you have must have heard them at one point. And so, when you're first sitting down... And in Tibetan, they say the first state is achieved by the power of hearing, which is instruction.

(16:21): Where are you supposed to focus your attention? What posture do you have? So, this is a long-term memory. Maybe you received the instruction one week ago. So, you must be remembering that, that's long-term memory while you're practicing. And so it's a retrospective mindfulness. If you don't have the retrospective mindfulness, you'll sit there and not know what you're supposed to do, because you completely forgot the instruction, right? And so that's one aspect. But there's also present-centered mindfulness of the breathing. And so if we're in the Theravada tradition, the sensations here at the apertures of nostrils, you're not looking backwards, you're not looking forwards. The sensation's arising from moment to moment, but very focused. So, it's not open to whatever sensations come up, but it is maintaining the continuity, the non-forgetfulness of your attention focused right here. And that's where stability comes in. Stability we can say is temporal continuity over time.

(17:13): And so there is present-centered mindfulness. And so these are the two aspects of mindfulness here, recalling the instructions, and in the present moment, focusing on the sensations of the breath. And then there is the introspection, the meta-cognitive awareness of the ongoing flow of attention. And I've already said it, so I'll be very brief, you're specifically attending to the possible occurrence of laxity or excitation. And then if you recognize it, then you must apply will, then you must have intention, and remember what are the antidote, apply the antidote. And so it's rather like a sailor trimming the sails as the winds shift, so that you are sailing well. This remains constant. That is the practice, even though the objects of mindfulness will shift from one method to another, introspection always has the same job in the practice of shamatha. It's not different. But you must, of course, remember how this is to be done.

(18:08): Now we have the second practice, which is frankly, it's more... overall, it's more subtle, this observing the mind. And this is really attending to a particular domain of experience. So, you're not attending to visual, auditory, any of the five physical senses. But you are attending to an immediate content of experience. The thoughts, images, and so forth that arise in that mental domain of experience that is your object of mindfulness. And so your mindfulness is present-centered. That is, after you remembered what the instructions are. It is present-centered and it's real-time mindfulness. And I'll explain this. Real-time mindfulness of the space of the mind, the domain. And I put this in quotation marks, objective contents, such as discursive thoughts, mental images, and dream events. Now, something that David did not allude to, and I think he was well-representing his own discipline, but a term I never heard, was mental perception.

(19:08): When he spoke of perception, he spoke of five-sensory perception and then the perception of our balance, movement, and so forth. But there was no reference to mental perception. And that is our ability to directly perceive events that you do not detect by means of your five physical senses. I would argue, now here's my hypothesis, because I think there's some controversy here, I don't speak with authority. But for example, in a dream, in a dream, especially a lucid dream, [foreign language 00:19:41]. In the midst of a lucid dream, where you're recognizing the dream as the dream, it's very evident that you are directly proceeding mental facsimiles, [foreign language 00:19:50], mental facsimiles of visual form, mental facsimiles of sound, of even smell, of taste, of touch.

(19:58): And they're appearing to you objectively in the dream. They're appearing to you as objects in the dream. You're not simply remembering them, you're directly perceiving right now what is manifest. And I will call that mental perception. And so I would suggest-

His Holiness the Dalai Lama (20:12):

[foreign language 00:20:12].

B. Alan Wallace (20:12):

This is controversial, but I will put this out. Maybe it's completely wrong. But my sense is clearly you don't infer the immediate concept of the dream, you're not simply remembering past images. These are fresh, unprecedented dreams. Although, of course, if you are born blind, you will not dream in color. So you'll not dream with visual form.

His Holiness the Dalai Lama (20:35):

[foreign language 00:20:35].

B. Alan Wallace (20:40):

It's not only mental perception, but I would say your direct access to the forms and so forth in the dream. It's not just inference. It's not just memory. I would propose that there is certainly conceptualization. [foreign language 00:20:55].

His Holiness the Dalai Lama (20:55):

[foreign language 00:20:55].

B. Alan Wallace (21:01):

[crosstalk 00:21:01] And so if this is the case, and his Holiness has not objected yet. If this is the case, if we can agree that we are mentally perceiving objective appearances within the dream, I would suggest this is not only while you're dreaming, but when you're meditating. And you're focusing on the space of the mind and you will objectively observe mental images arising, spontaneously. You will mentally hear chit-chat or discursive thoughts just arising. And you may even have other mental images arise as well. And so, discursive thoughts, mental images... But this is present centered, it's real time.

(21:37): And I would suggest, again a hypothesis, is that your perception of, let's say a mental image. When I said I could visualize an image of a banana above David's head. I would suggest, here's another hypothesis that your head didn't go down, that the appearance of the banana, the mental image of the appearance of the banana, is simultaneous, [foreign language 00:21:57], with my mental perception of it. In other words, it's not first the appearance and then I get it later. But in fact, it's real time. Another very interesting aspect of this practice is not simply attending to the objective appearances within the mind, but also paying attention to, and recognizing, emotions arising. Anger, sadness, fear, and also recognizing desires arising.

(22:20): My hypothesis here is that when we're observing an emotion or a desire, this is actually retrospective, but in terms of working memory, so very short term memory. And such that the emotion that you're recognizing is [foreign language 00:22:36], is one that arose just a couple of moments before, could be milliseconds before, 20, 50 milliseconds. But in fact, it's retrospective, but very short term. And so when you recognize the desire, at that moment you're not having the desire, because the desire is going to be for something. So the desire will be focused on what you desire, but when you're observing the desire, that's the object of mindfulness and not the object of desire. This very interesting practice, of awareness of awareness, is also called [foreign language 00:23:07].

(23:07): So, without a sign, [foreign language 00:23:09], so without a support, without a basis. So the awareness of awareness is not taking anything else, any appearance to the mind, as an object. Not even thoughts or emotions. It is simply, as I said earlier, it is resting simply... The interest is simply in the experience of being aware, awareness of awareness. I would suggest, again in terms of very precise analysis, a single moment of awareness is not taking itself as its object, but the later moment takes a preceding moment of awareness as its object. So, it's very short-term working memory. So, working memory and then we have meta-cognition does the same. So, those are the three methods we focused on in the Shamatha Project. And pretty much everybody I taught found that they get a lot of benefit from at least one method or another.

(23:57): Many people, interestingly, would start with mindfulness of breathing or observing the mind. And they naturally wanted to move, after some months, to awareness of awareness. Out of the Shamatha Project, we have now six people who are continuing to practice about 10 hours a day. All of them now have gone to awareness of awareness. Not because I pushed them, they naturally felt inclined. So, David had bad news. I put bad news as objections to introspection. Not that it's a bad idea altogether, but is it possible, is it viable, to introduce this first-person observing one's own mental states and thought processes and so forth, to incorporate this into the scientific framework? Or is it just not possible because science is objective and this is very subjective? So, I'll give a short list here, I think David's was longer, and I will not try to answer them all here, but raise them.

(24:52): And I will suggest that Buddhism has addressed these problems, these difficulties, and has, to my mind, have given very substantial responses to them. And so the first one... and all of these I've heard from people, I didn't make any of these up. And that is that introspective observations, what we actually observe with mental perception is unstable and impossible to verify. So, the first objection, and none of these are trivial or silly, I think. All of these are very serious and important qualms, concerns. So, the first of these is unstable. Well, I would say if you've stabilized your attention that might help. Impossible to verify is if I should be practicing shamatha. And then I tell my teacher, [foreign language 00:25:38], I can now maintain my attention with unwavering mindfulness for one half hour. And I never lose the object in one half hour.

(25:44): How does he know? Maybe because I have a very nice happy face or he thinks I'm a very honest person. But clearly, just by looking at me, he's not just going to take my word for it. No scientist would do that. And so is this an insurmountable problem? Well, I think traditionally,

that is for the last 2,500 years of Buddhism, such meditation will be done in many cases in close dialogue with a meditation master, who has ways of evaluating, not just the person's speech, but the teacher will ask very insightful questions to draw out. The teacher will observe the student's behavior. And students may also talk among themselves, as we had in the Shamatha Project. There was a lot of cross-referencing. And after three months in a retreat, the meditators were using terms that I think they, to a large extent, understood among themselves. Whereas people who are not in that retreat or had never meditated, did not know what they're talking about.

(26:37): They would just be empty words. Stable, vivid, but would not have the reference. So, it's an interesting one, but the impossibility to verify, I think we are now in an unprecedented situation. And that is, on the one hand, we can rely upon the time-tested methods of Buddhism, student- teacher relationship, and so forth. But now also we have various types of behavioral methods to determine whether a person is maintaining stability. Behavioral methods, using computer screens and various types of measurements to check vividness. And over time, there may be... It's speculation, but it's not impossible. We may find neuro correlates of attentional stability, attentional vividness.

(27:19): And so by the time you bring in brain science and behavioral science and very rigorous first-person observation, you might have a contemplative science that is truly scientific because two aspects are already science. And the third one becomes scientific because it's becoming more and more rigorous. So, maybe I'm speaking too much about that, but that's one. Now here's I think almost a silly one, but I think this was posed by a person who has never meditated. But I've heard this. Introspection observations are useful only for understanding meditative states, but not for understanding ordinary or pathological data.

His Holiness the Dalai Lama (27:55):

[foreign language 00:27:55]

B. Alan Wallace (27:55):

[crosstalk 00:27:55]

Thupten Jinpa Langri (27:55):

But it is [inaudible 00:28:20] saying that in a way we are using kind of introspective [inaudible 00:28:24] all the time.

B. Alan Wallace (28:24):

We are, we must. And so this actually is maybe the silliest, but I have heard it from a non-silly person. And that is when you put... Anybody who's meditated, even for a day, knows that you don't simply slip into a meditative state and remain there all day with a happy smile. And that is, you're meditating. You're practicing vipassana, you're practicing shamatha, or you're practicing any type of meditation. This will arouse a wide array of emotions, of desires, of sadness, all

kinds of things. So you're not just going into a meditative state and getting insight only into that. Especially the practice of observing the mind is famous for bringing forth to consciousness many old memories, desires, emotions, including fear, anger, craving sadness, excitement, boredom. And so you get a very broad array. It's not just with [foreign language 00:29:19] because this is [foreign language 00:29:19]. It's not just introspection in a narrow sense, but really observing rigorously one's own mental states and processes.

(29:30): And so this one to my mind, it's definite. You don't just get insight into meditative states. In fact, you may have insight into a wide variety of mental states. Here's one I just heard recently, and that is introspection is subject to, or looking inward is subject to, contamination by theory. I think this is again somewhat naive, as if scientific observations have no contamination by theory. That would have to be an extremely primitive level of observation. If Cliff shows me the latest fMRI scan, he said, "Look, Alan, can't you see what I see?" And I say, "Yes, I see a psychedelic oval image. This is really nice." Now this is a serious objection in terms of the collapse of the introspectionist movement. From about 1875 to 1910, introspection was used. And then it was pretty much discarded in academic psychology because there were many internal problems.

(30:31): And one of the very famous problems was, in one laboratory the investigator would almost be suggesting what people should be seeing, and then they would see what he or she said. And so that is contaminated, that's true. But I would suggest it doesn't have to be that way. Theory can be used to illuminate and not merely to bias. And so that's where you really are trying to approach a contemplative science and not a contemplative indoctrination, where you're only aimed at seeing what you should see. Then you don't need to meditate, you just memorize. This is a very interesting one. Introspective observations are subject to phenomenological illusion, and that is that appearances and reality are different, right? Well, if we actually knew this, the nature, if scientifically we knew the nature of subjectively experienced mental images, desires, emotions, then we could compare the appearances of these with reality.

(31:28): But the problem is, we don't. We know the neural correlates, but no one has ever demonstrated that neural correlates are identical to the subjective experience. That's a hypothesis, never been tested, never been validated. And so, since we don't know the nature, that is, scientifically we don't yet know the nature of consciousness or other subjective experiences. Therefore to say the appearances are, how do you say, misleading, I think we have no basis for saying that. And one could similarly say to Galileo that what you're observing through the telescope, in fact, is not what's simply out there. Because what you're seeing are images created in part by your brain. But if he had stopped there and say, "Oh, well, I will stop observing these images created my brain," we'd have no astronomy. And so we deal with the appearances, we take them seriously, because to not look at them at all is then a dead end.

(32:22): Quickly now, this is a very interesting one from Freud. That is, our observations are subject to concealment, [foreign language 00:32:29], misrepresentation [foreign language 00:32:31] by unconscious mental processes. For example, I don't want to think of myself as an angry person. I want to think of myself very nice person. Anger comes up. I say, "That's not anger, that's compassion." So I repress it, or I interpret it in accordance to my self-notion. That

is certainly a possibility. And then finally, this is most interesting one, the most interesting to me, you can tell. That intersective observations are subject to distortion due to observer participancy. And that is, observing the mental event influences it. This is absolutely central to all observations made in quantum mechanics. It is not quantum mechanics. [crosstalk 00:33:13] Observer participancy is at the core of all observations made in quantum mechanics. Quantum mechanics is regarded by many as the most successful of all physical theories in history.

(33:26): Therefore, it did not cause disqualify quantum mechanics, it should not disqualify introspection. [inaudible 00:33:36] I will wrap up quickly. Introspection I would say is indispensable, whether you're a cognitive neuroscientist, a behavioral psychologist, because we cannot fully explain what it means to be conscious or to experience mental state, solely or exclusively by use of physics and biology. We must bring in the first person and it must involve observation. This has been the great strength of science since the time of Galileo. If you want to understand something, any natural phenomenon, you observe it as carefully as you can. If you want to understand states of consciousness, mental processes, in accordance with a whole scientific tradition, observe them as carefully as you can. And don't say, oh, observation is no good here, we'll just study brain correlates. Or we'll just study behavior because we're more comfortable. Because they're objective and physical.

(34:27): So, I'll skip Einstein. He said, "You won't get it just by logic." And this is what distinguished Galileo from the philosophers of the medieval period, wanted to get everything with logic. And he got out his telescope and that actually started modern science as we know it. And we come to open questions. So, I'm not going to try to answer these, that's why they're called open. The relevance of ethics for refining the mind. Ethics, the cultivation of mental balance, or samati, but including also these qualities of the heart, of loving-kindness and so forth.

(35:01): What is the relevance of these and one's world-view for the practice of contemplative science that is rigorously investigating the mind from a first person perspective in full collaboration with the third-person methods of modern science? And that is, it's widely affirmed in Buddhism, you will not develop a very high level of samati if your way of life is very destructive, or if your mind is still strongly succumbing to what are called the five hindrances, like sensual craving, ill will, and so forth. You will not achieve.

(35:34): So, ethics is built into the system, but also world-view. Maybe it's not an accident that the six people who are continuing out of 70 people, still practicing now for almost two years, 10 hours a day, all of them have a Buddhist world-view. Maybe that's not an accident. And so there may be some world-views that are more supportive for meditation and others less. A very interesting one for those of us in practice, [crosstalk 00:35:59] is can traditional achievements of mental training, such as shamatha and discovering contemplative insights, vipassana, can these be replicated, again done in the modern world, not just by tulkus, not just by people who are born with great realization, but by very ordinary people, like this one here? Raised in the west, not in a Buddhist monastery or in a Buddhist culture.

(36:22): Is it possible, or are we too late? Are we too late? Say, so sorry, buddhadharma has degenerated now. You have no chance. So, it's a real question. His holiness... If I can say, this is a nice short story, very short. But I heard that about 35 years ago, one fellow I knew from Europe had an audience with his holiness. And he was being very sad, saying, oh, these times are so degenerate. Now there's no possibility of gaining deep realization. And what this fellow told me, I heard through the grapevine, is his holiness responded, "Nowadays, if you practice like Milarepa," a great Tibetan yogi, "you will achieve like Milarepa. But if you did think, degenerate, degenerate, then not so much success." But it's an open question. We have these wonderful descriptions of nine stages of shamatha, achieving shamatha, achieving the four measurables of loving-kindness, and so forth, wonderful descriptions. But is anybody realizing this today, and will anybody actually report? Or what they all say, oh, I have no realization, I have no realization.

(37:25): So, it's an open question. Now, here's an interesting one. To what extent might science be helpful? I think, to my mind, not in creating new methods, but taking the methods that are already there and optimizing them, making them most effective. Can we, with the effect, with the input of science finding, oh, well, among 60 people, people practicing this method had better success. These people had less success. These people were also doing preliminary practices, [inaudible 00:37:52] they had better or worse success. But getting feedback from third-person perspective, might this help us to select and maybe adapt Buddhist practices so they're most effective for people in the modern world? So, I am finished.

His Holiness the Dalai Lama (38:06):

Thank you. Thank you. Wonderful.