

# The Science of Meditation

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When you meditate, whether you realize it or not, you're actually making some assumptions: that the mind can be trained, that your actions can actually make a difference, and that it's worthwhile to train the mind, because the mind is what determines what actions you're going to take. You're also assuming that there's a pattern to the way action plays itself out. Certain actions are going to be skillful. In other words, they lead to good results. Other actions are not. They're going to lead to suffering, to harm. If there were no pattern, the things you learn today wouldn't be applicable tomorrow. You'd never know. Meditation, trying to learn any skill, would be a waste of time, because the rules could change at a moment's notice. And if your actions didn't make a difference, why are you sitting here?

The simple fact that you're here meditating, trying to train the mind, means that, at least on one level, you accept these ideas as assumptions. It's like scientists. Sometimes people believe science doesn't make assumptions, that it doesn't accept anything that hasn't been proven. But that's not really the case. Scientists work with lots of assumptions. One, if you're going to run an experiment, you have to assume that some things cause other things, and that by changing A, you may change B. In other words, you assume that there are actual causal connections in the world. In fact, that's what you're looking for: to see precisely what those connections are. You also assume that the way you design and run the experiment will make the difference between whether it's a good experiment or a bad one. You're assuming that people—you and other scientists—are responsible for their actions and they can make choices as they design and run their experiments.

Some forms of scientific knowledge like to claim that everything in the universe is predetermined by past causes, but the activity of science itself assumes free will. If people couldn't make choices, there'd be no sense in criticizing someone whose experiment was poorly designed, or accepting the results of someone whose experiment was well-designed. It would all be very arbitrary. And both sides could simply say, "Well, I was predetermined to do it that way." That would let them off the hook.

You're also assuming that some patterns are universal.

I was reading recently about experiments indicating that some of the constants they use in order to calculate the size and the history of the universe seem to be different in one direction from what they are in another. That's kind of scary. Scientists like to think that the laws of physics are the same everywhere. That's one of their basic assumptions. But this experiment calls that into question.

So there are a lot of assumptions you make simply by the fact that you act. Try to be aware of these assumptions, because we're going to be exploring them in the meditation.

Meditation actually puts them to the test for a particular purpose, which is to put an end to suffering. You need to train the mind; you need to experiment. Now, experimenting doesn't mean simply following some rules. It means having a control, and changing other things, manipulating them, and seeing if your manipulation makes a difference as measured against the control. You could sit and watch a process for years and years and years, but if you didn't do anything to the process, you wouldn't really know what the causal patterns are. You might think you see some patterns, but you can't really check them unless you've manipulated the causes and seen if the manipulation makes any difference in the effects.

There's an old Thai joke about the farmer who went into a town for the first time in his life. He saw a flashing neon sign. It so happened that he saw the sign when the light was on. He walked up to it and tried to blow it out. He blew on it and sure enough the light happened to go out. So he assumed that he had blown it out. Of course, the way you check for that is to see if the sign comes back on again and then see if it goes out on its own without your blowing on it, or if it goes out every time you blow on it. You've got to check things again and again and again, trying different approaches.

This is particularly important as you try to get the mind to settle down. What's going to work? What's not going to work? Sometimes it's a fluke. You're sitting here and all of a sudden everything just comes together. But you've got to figure out why. Otherwise, it's not going to come together again, and you won't know what to do. It's not just a matter of accepting that, well, sometimes the mind comes together and sometimes it doesn't. The coming together, as the Buddha said, is something you want to develop. You work on it. You bring it into being.

That's what bhavana, the Pali word for meditation, means. You bring things into being; you develop them. You work on your concentration. You see what you can do to make those moments of concentration more frequent and longer-lasting. You've got to experiment. Otherwise you won't learn anything about the processes of the mind. You can see things arise and pass away, arise and pass away, and that's it. But the important thing about arising and passing away is trying to notice what you did to make these things arise, particularly unskillful mental states. What did you do? And what did you do when they passed away? When there's suffering, stress: What did you do to increase the stress? What did you do when the stress stopped? Then, once you think you've noticed a connection, you've got to test it again, and again.

Ajaan Fuang wasn't interested in hearing about things happening in your meditation until they had happened at least two times. In other words, he wanted you to gain a certain amount of mastery over your meditation so that you could bring these states of mind into being at will. If they were just flukes, he wasn't interested.

So it's important to be clear on our assumptions as we meditate here. The idea that we're simply going to watch things, and that objective truth is going to appear when we're very non-interfering: You've got to call that idea into question, because the truth may be appearing, but how are you going to know what's connected with what? After all, causation is the basic issue of right view. Right view is not about inconstancy, stress, not-self. Those are the three characteristics or the three perceptions for developing dispassion. Right view has a larger framework: It's all about the four noble truths. You're looking for the stress, trying to comprehend it, until you can understand the cause. When you see the cause, you abandon it. The causal connection is what's important there. Similarly with the path: The path doesn't cause the end of suffering but it takes you there.

The image of the path is like a road going to a mountain. The road doesn't cause the mountain, and the fact that you follow the road doesn't cause the mountain, but by following the road you get there. There's a connection between the action and the point where it leads. We're assuming that there's a pattern here, otherwise what the Buddha taught 2,600 years ago wouldn't be relevant any more. Things could change at any time. But if there's going to be a path to the end of suffering that people can teach to one another, we have to assume that there's a pattern. Then, based on that assumption, we experiment.

This is what's scientific about meditation. We have some of the same assumptions that a scientist brings to an experiment: that you have free will, the ability to choose how you're going to design your experiment; and that you have to change things in order to learn about patterns. Otherwise, you can go through life thinking that neon signs are going to stay lit until you blow on them just because one neon sign happened to go out the one time you blew on it.

You have to try again and again and again to see what works and what doesn't, what's connected to what. That's where insight arises. And the skill in the meditation comes from learning how to anticipate when something is happening that will be skillful or not. If it's not, what are you going to do to deflect it? If it is skillful, what are you going to do to make sure it really does give its results and that it keeps on giving its results? The only way you can anticipate these kinds of things is by going over them, again and again and again.

So we try to limit the number of variables here. You're sitting here with your eyes closed, focused on the breath. Well, the mind's going to do a lot of different things even while you're focused just on the breath. You have the choice to decide what to do. You can change the way you breathe; you can change the way you focus. Which aspect of the process are you going to focus on?

The Buddha talks about four frames of reference in establishing mindfulness: body, feelings, mind, mental qualities, all taken in and of themselves. It's not that they involve doing four different kinds of meditation exercises. You stay with the breath, which is an aspect of the body. Then if you're having trouble staying with the breath, you look at what other issues might be involved. Is there something wrong with the feeling that you're creating with the breath? Can you change that feeling? The Buddha recommends breathing in a way that gives rise to rapture or pleasure. Do you know how to do that? That's one aspect of staying with the breath, but it's connected with feelings, too.

Or you may look at the mind state that you're bringing to the meditation. Sometimes the mind is sluggish. Sometimes it's down, depressed, and you need to do something to give it more energy—to gladden it, as the Buddha says. Other times, the mind is bouncing all around like a ping pong ball. When that's the case, what can you do to get it to settle down? If it's burdened by a particular assumption, if it's burdened by a particular thought, what can you do to get it out from under the burden? That's using the mind as your frame of reference. You're still there with the breath, but you're looking at the problem from a different angle: the angle of how the breath is related to the mind.

Finally, there are dhammas, mental qualities. This frame of reference gives guidance for when you see that something keeps pulling you away: How can you deal with it effectively so that you don't keep on being distracted by it? What qualities do you need to let go? What qualities do you need to develop?

All of these four different frames of reference deal with different aspects of the problem of how you stay with the breath. The skill here is a matter of learning to read the situation to notice which aspect you have to focus on. This comes with practice and it comes with experimenting, tweaking things.

I think it was Kurt Vonnegut who compared scientists to little kids, people who still like to play even as they grow up. And most of the famous scientists were like that. They would play with ideas. They would play with possibilities. That's how they discovered things that other people hadn't discovered before, or hadn't even thought of before. Science is not a body of knowledge. It's an approach, with assumptions. And meditation is the same. You could read all the teachings in the Canon, you could read all the teachings of the ajans and be able to repeat them, but that wouldn't get you awakened. That's the wrong approach.

What does lead to awakening is taking the Buddha's approach, which was an experimental approach, based on the assumption that you can learn from changing your actions. That's actually two assumptions: One, you can change your actions. Two, there are patterns that can be learned in that way.

This is what makes meditation a science. The clearer you are about the fact that the approach, this experimental approach, is going to give you the knowledge, that's when the knowledge really will make a huge difference in your mind, in your life, in your entire relationship to space and time. It's that radical.

So be willing to call some of your other assumptions into question, especially those that get in the way of the quest for the end of suffering. And give this experiment a try.